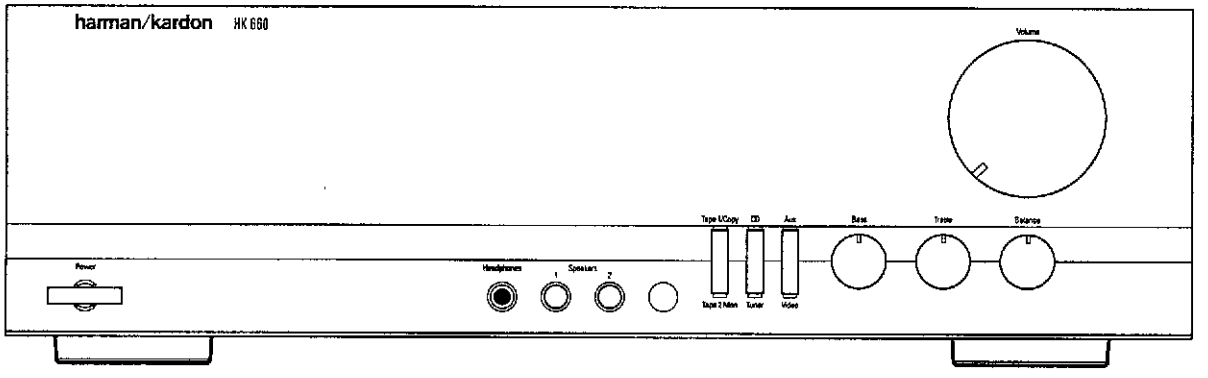
The Harman Kardon Model HK640/HK660 INTEGRATED AMPLIFIER

Manual 198A

Technical Manual



The following marks found in the parts list of this manual identify the models as follows:

HK640/HK660 (IB) : International model Black version
HK640/HK660 (I) : International model
HK640 (WB) : Asia/Oceania model Black version

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harman/kardon

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80 Crossways Park West, Woodbury, N.Y. 11797
1112-HK640-A A9502 300 Printed in Japan

SPECIFICATIONS

	Nominal	Limit	
RMS Output Power			
8 Ω, 1kHz THD 0.1%	62.3W	≧ 55W	(Model: HK640)
8 Ω, 1kHz THD 0.1%	75.6W	≧ 65W	(Model: HK660)
4 Ω, 1kHz THD 0.3%	91.2W	≧ 75W	(Model: HK640)
4 Ω, 1kHz THD 0.3%	117.2W	≧ 90W	(Model: HK660)
High-instantaneous Current			
Capability (HCC)	40A	≧ 35A	(Model: HK640)
	38.4A	≧ 35A	(Model: HK660)
Half Power Bandwidth			
(THD 0.1%)	<10Hz-82kHz	<10Hz-70kHz	(Model: HK640)
	<10Hz-80kHz	<10Hz-70kHz	(Model: HK660)
Frequency Response			
(at -3dB down)	0.17Hz-105kHz	<1Hz-≧90kHz	(Model: HK640)
	0.20Hz-108kHz	<1Hz-≧90kHz	(Model: HK660)
Input Sensitivity			
(at 55W output) Tuner/CD:	140mV	>140mV ± 25mV/17kΩ ± 3kΩ	
Option Phono (MM):	2.4mV/49kohm		
Option Phono (MC):	131 μV/56Ω		
Signal to Noise Ratio			
Tuner/CD:	84.0dB	≧ 74dB	(Model: HK640)
	83.6dB	≧ 74dB	(Model: HK660)
Option Phono (MM):	79dB		
Option Phono (MC):	75dB		
Channel Separation (at 10kHz)	60.0dB	≧ 45dB	
Option Phono (MM):	65dB		
Option Phono (MC):	65dB		
IM Distortion Ratio (at 1W):	0.027%	≦ 0.1%	

		Nominal	Limit	
Damping Factor (at 1Hz):		94.3	≧ 85	(Model: HK640)
		90.1	≧ 85	(Model: HK660)
Phono-Overload				
Option Phono (MM):		109mV		
Option Phono (MC):		5.6mV		
Tone Control Characteristics				
Bass (at 50Hz)	Boost	10dB ± 2dB		
	Cut	10dB ± 2dB		
Treble (at 10kHz)	Boost	10dB ± 2dB		
	Cut	10dB ± 2dB		
DC Output Voltage (at 8Ω)				
L channel		0mV ± 60mV		
R channel		0mV ± 60mV		
Idling Current (at 8Ω)		75mA ± 5mA		
Dimensions		17.4" × 5.3" × 14.1"		(Model: HK640)
(W × H × D)		(443 × 134 × 359 mm)		
		17.4" × 5.3" × 14.4"		(Model: HK660)
		(443 × 134 × 366 mm)		
Weight		19.4 lbs./8.8kg		(Model: HK640)
		21.6 lbs./9.8kg		(Model: HK660)
Power Supply		AC 230V, 50/60Hz		
Power Consumption		230W		(Model: HK640)
		240W		(Model: HK660)

These specifications are service target specs.

Specifications and components are subject to change without notice.
Overall performance will be maintained or improved.

DISASSEMBLY PROCEDURES (REFER TO PAGES 4 AND15)

[1] CABINET TOP (131) REMOVAL

Remove 6 screws (A) and then remove the Cabinet Top (131).

[2] FRONT PANEL ASS'Y (AA) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step [1].
2. Pull out 3 Rotary Knobs (151).
3. Remove 5 screws (B) and then remove the Front Panel Ass'y (AA).

[3] MAIN P.C. BOARD (PCB-1) REMOVAL

1. Remove the Front Panel Ass'y (AA), referring to the previous step [2].
2. Disconnect the Connector (CW703) from 1 Connector (CN703) on the CPU P.C. Board (PCB-5).
3. Pull out the Rotary Knob (150) and 2 Push Buttons (146).
4. Disconnect the 3 Connectors (JL501, CW704 and W-502) from 3 Connectors (CN502, CN704 and CN503) on the VR P.C. Board (PCB-10).
5. Disconnect the Jumper Lead (JL702) from Connector (CN702B) on the Main P.C. Board (PCB-1).
6. Remove 3 hexagon nuts (C).
7. Remove 4 screws (D) and then remove the Metal Fitting (166).
8. Remove 8 screws (E) and then remove the Chassis (161) with CPU P.C. Board (PCB-5), Power LED P.C. Board (PCB-7), VR P.C. Board (PCB-10) and SP SW P.C. Board (PCB-2).
9. Remove 13 screws (F) and then remove the Main P.C. Board (PCB-1).
   If necessary unsolder the lead wire.

[4] CPU P.C. BOARD (PCB-5) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step [1].
2. Disconnect the Jumper Lead (JL702) from Connector (CN702A) on the CPU P.C. Board (PCB-5).
3. Disconnect the Connector (CW703) from Connector (CN703) on the CPU P.C. Board (PCB-5).
4. Disconnect the Connector (CW282) from Connector (CN282) on the I/O P.C. Board (PCB-6).
5. Remove 5 screws (G) and then remove CPU P.C. Board (PCB-5).
   If necessary unsolder the lead wire.

[5] VOLUME P.C. BOARD (PCB-10) REMOVAL

1. Remove the Front Panel Ass'y (AA), referring to the previous step [2].
2. Disconnect the Connector (CW703) from Connector (CN703) on the CPU P.C. Board (PCB-5).
3. Disconnect 3 Connectors (JL501, CW704 and W-502) from 3 Connectors (CN502, CN704 and CN503) on the Volume P.C. Board (PCB-10).
4. Remove hexagon nut (H) and then remove the Volume P.C. Board (PCB-10).

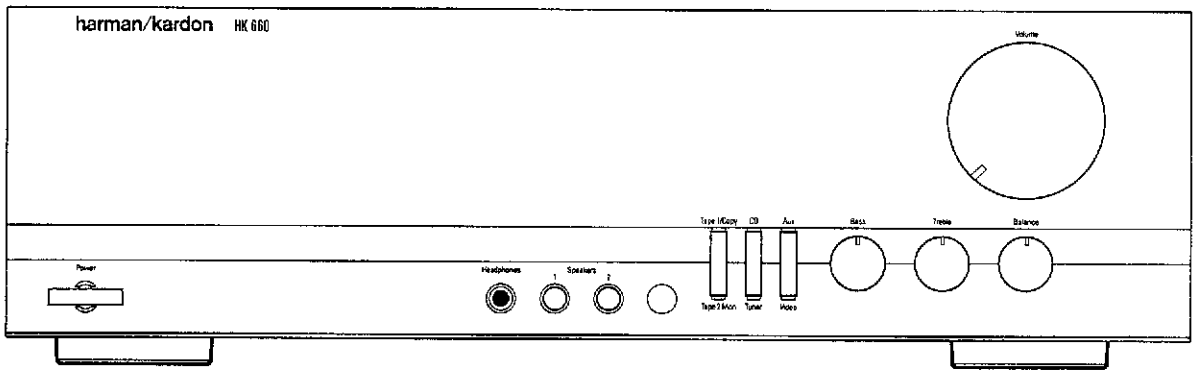
[6] I/O P.C. BOARD (PCB-6) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step [1].
2. Remove 2 screws (I) and then remove SP Terminal P.C. Board (PCB-4).
3. Disconnect 2 Connectors (CW281 and CW282) from 2 Connectors (CN281 and CN282) on the I/O P.C. Board (PCB-6).
4. Remove 2 screws (J) and then remove I/O P.C. Board (PCB-6).

[7] OPTION PHONO P.C. BOARD (PCB-101) REMOVAL

1. Remove the Cabinet Top (131), referring to the previous step [1].
2. Remove 1 revet (K) and 4 screws (D) and then remove the Metal Fitting (166).
3. Remove 1 screw (199) and then disconnect 2 Connectors (CW602 and W601) from 2 Connectors (CN102 and CN101) on the Main P.C. Board (PCB-1).

CONTROLS AND FUNCTIONS



Power Switch
Press to turn the unit on and off.

Headphone Jack
Plug in headphones if desired. (With both Speakers 1 and 2 switches in Off position, output is supplied only to headphones.)

Speakers Switches
Push in to select either of two sets of speakers, or both, or neither (headphone output only).

Function Selector Buttons
Select desired input source by pressing the corresponding button.

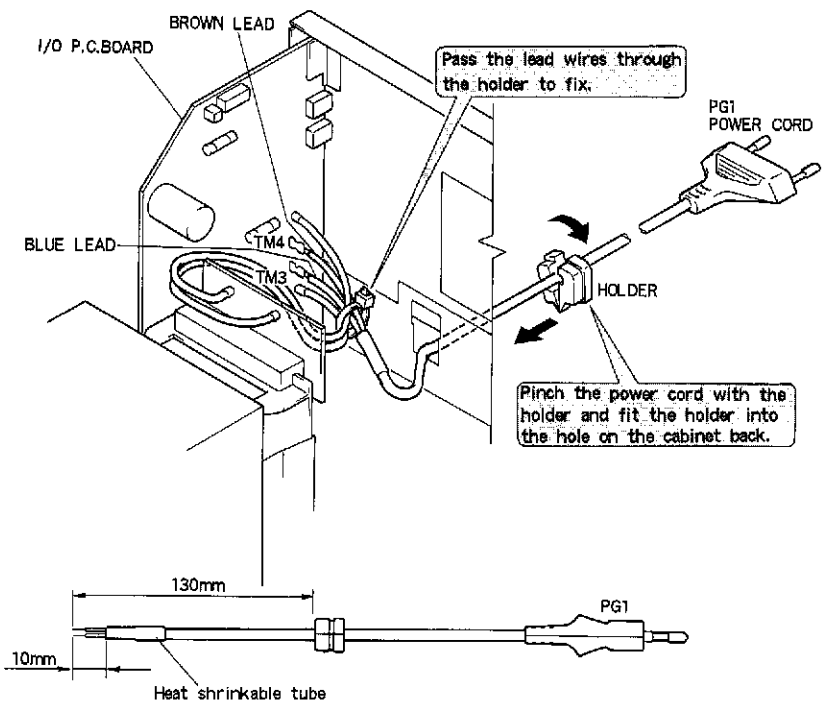
Bass Control
Turn to increase or decrease the proportion of low frequency sound.

Treble Control
Turn to increase or decrease the proportion of high frequency sound.

Balance Control
Turn to adjust relative output level of left and right speakers.

Volume Control
Turn to raise or lower output volume.

POWER CORD REPLACEMENT



ALIGNMENT PROCEDURES (REFER TO PAGES 6,7AND18)

■ **Conditions :** • Set the Function selector to the "CD" position.
• Set the Volume control to minimum.
• Make the adjustment at a room temperature of 77°F (25°C).

■ DC BALANCE CONFIRMATION

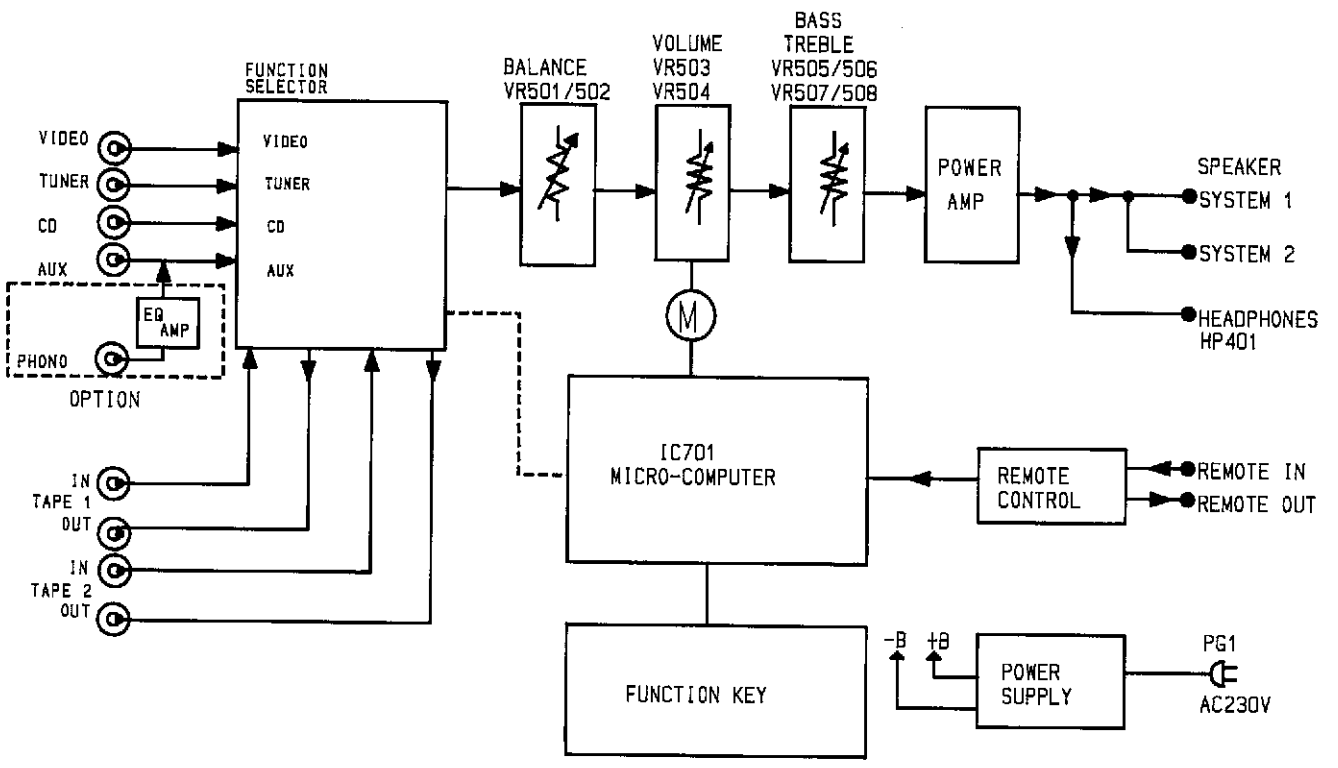
Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to Speaker output (L ch).		0±60mV
2	Connect the Digital Volt Meter to Speaker output (R ch).		0±60mV

■ IDLING CURRENT ADJUSTMENT

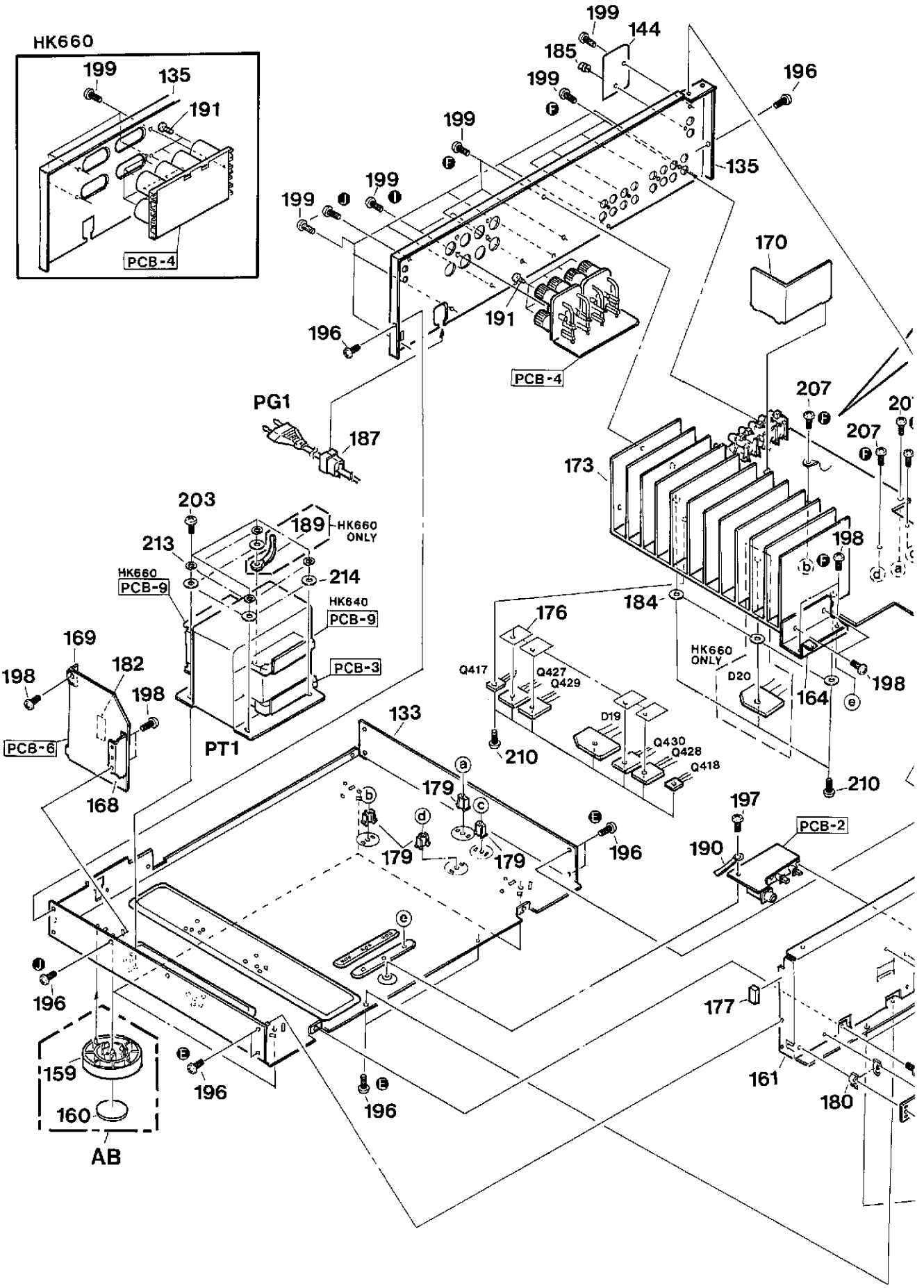
Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to TP401 and TP403.	VR401	33mV±2mV
2	Connect the Digital Volt Meter to TP402 and TP404.	VR402	33mV±2mV

■ After the above adjustment, leave the unit with its power on for longer than 15 minutes and then repeat the same adjustment.

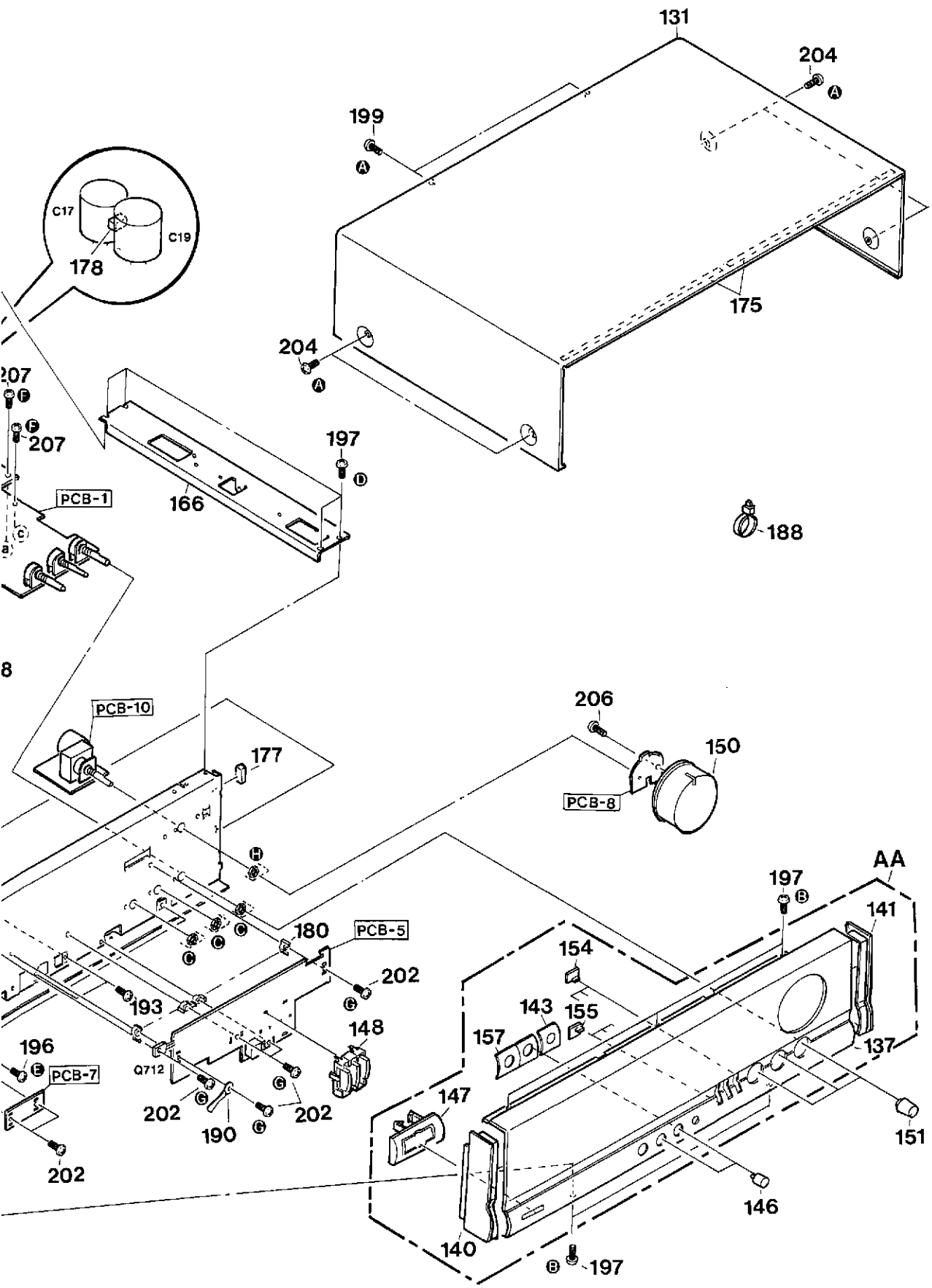
BLOCK DIAGRAM



GENERAL UNIT
EXPLODED VIEW



	F	G	H	I	J

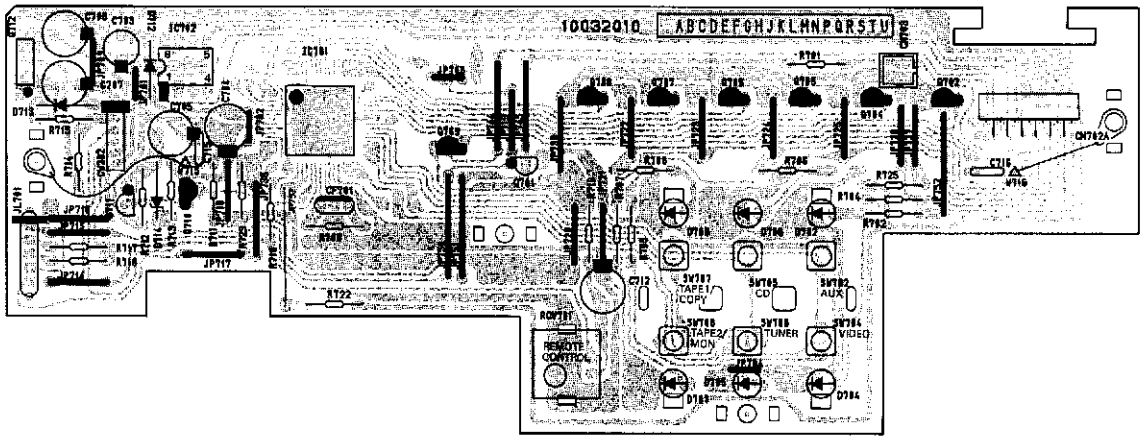

131
204
199
C17
C19
178
175
204
207
207
197
PCB-1
166
188
8
PCB-10
206
150
177
PCB-8
AA
197
141
180
PCB-5
154
202
193
143
155
148
157
137
196
PCB-7
Q712
147
202
202
190
202
151
146
140
197

GENERAL UNIT PARTS LIST

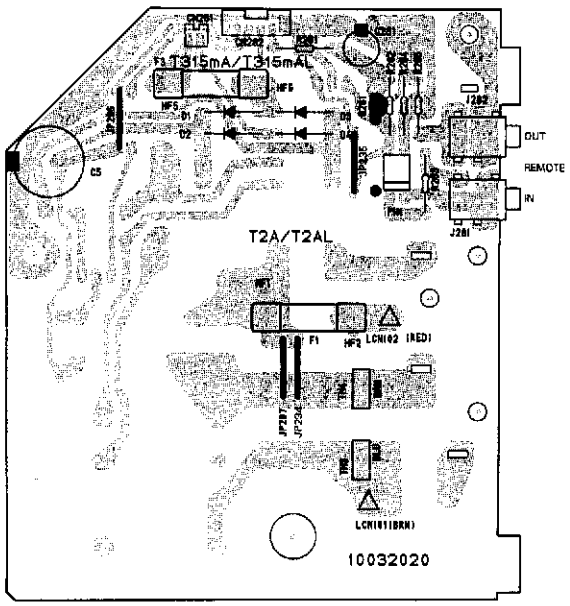
Ref. No.	Part No.	Description
AA	A443-HK6440A	FRONT PANEL ASSEMBLY (Model: HK640) (IB) (WB)
AA	A443-HK6440B	FRONT PANEL ASSEMBLY (Model: HK640) (I)
AA	A443-HK6660A	FRONT PANEL ASSEMBLY (Model: HK660) (IB)
AA	A443-HK6660B	FRONT PANEL ASSEMBLY (Model: HK660) (I)
AB	A319-HK6440A	LEG ASSEMBLY
131	1414-17601	CABINET TOP
133	1424-38201	CABINET BACK, BOTTOM
135	1424-38301	CABINET BACK, REAR (Model: HK640) (IB) (I)
135	1424-38302	CABINET BACK, REAR (Model: HK640) (WB)
135	1424-38401	CABINET BACK, REAR (Model: HK660)
137	1443-15001	FRONT PANEL (Model: HK640) (IB) (WB)
137	1443-15002	FRONT PANEL (Model: HK640) (I)
137	1443-15003	FRONT PANEL (Model: HK660) (IB)
137	1443-15004	FRONT PANEL (Model: HK660) (I)
140	1562-09602	FRAME, L (Model: HK640) (IB) (WB) (Model: HK660) (IB)
140	1562-09601	FRAME, L (Model: HK640/660) (I)
141	1562-09702	FRAME, R (Model: HK640) (IB) (WB) (Model: HK660) (IB)
141	1562-09701	FRAME, R (Model: HK640/660) (I)
143	1532-22801	WINDOW, REMOTE SENSOR
144	1511-23601	PLATE, EQ
146	1662-67202	PUSH BUTTON, SPEAKERS (×2) (Model: HK640) (IB) (WB) (Model: HK660) (IB)
146	1662-67201	PUSH BUTTON, SPEAKERS (×2) (Model: HK640/660) (I)
147	1660-02302	PUSH BUTTON, POWER BUTTON/INDICATOR (Model: HK640) (IB) (WB) (Model: HK660) (IB)
147	1660-02301	PUSH BUTTON, POWER BUTTON/INDICATOR (Model: HK640/660) (I)
148	1662-71902	PUSH BUTTON, TAPE 1/COPY/TAPE 2 MON/CD/TUNER/AUX/VIDEO (Model: HK640) (IB) (WB) (Model: HK660) (IB)
148	1662-71901	PUSH BUTTON, TAPE 1/COPY/TAPE 2 MON/CD/TUNER/AUX/VIDEO (Model: HK640/660) (I)
150	1630-05002	ROTARY KNOB, VOLUME (Model: HK640) (IB) (WB) (Model: HK660) (IB)
150	1630-05001	ROTARY KNOB, VOLUME (Model: HK640/660) (I)
151	1632-20702	ROTARY KNOB, BASS, TREBLE, BALANCE (×3) (Model: HK640) (IB) (WB) (Model: HK660) (IB)
151	1632-20701	ROTARY KNOB, BASS, TREBLE, BALANCE (×3) (Model: HK640/660) (I)
154	1732-09801	INDICATOR, TAPE1/COPY, CD, AUX (×3)
155	1732-09901	INDICATOR, TAPE2 MON, TUNER, VIDEO (×3)
157	1742-09402	ORNAMENT, SPEAKERS 1/2 BUTTON (Model: HK640) (IB) (WB) (Model: HK660) (IB)
157	1742-09401	ORNAMENT, SPEAKERS 1/2 BUTTON (Model: HK640/660) (I)
159	1319-04303	LEG (×4)
160	1319-04601	LEG, SPONGE (×4)
161	2211-7330	CHASSIS
164	2219-8422	METAL FITTG, HEAT SINK
166	2219-8424	METAL FITTG, R SIDE TOP
168	2219-8349	METAL FITTG, POWER IN SIDE
169	2219-8390	METAL FITTG, POWER IN
170	2216-7210	SHIELD PLATE
173	2222-7342	HEAT SINK (Model: HK640)
173	2222-7341	HEAT SINK (Model: HK660)
175	2224-146	INSULATOR, TOP COVER (×2)
176	2224-7134	INSULATOR, POWER Tr (×4) (Model: HK640)
176	2224-7148	INSULATOR, POWER Tr (×4) (Model: HK660)
177	2112-11809	SPONGE, CHASSIS SIDE (×2)
178	2112-11806	SPONGE, MAIN PCB C17, C19
179	2360-7017	BOSS, SPE, PCB (×4)
180	2360-7026	BOSS, SPE (×6)
182	1756-R01TL101	LABEL, FUSE LABEL (Model: HK660)
184	2402-0374	WASHER, PLASTIC (×2) (Model: HK640)
184	2402-0374	WASHER, PLASTIC (×3) (Model: HK660)
185	2459-3003511	RIVET, PLASTIC
187	2240-364	HOLDER, AC CORD
188	2240-R0101	HOLDER, WIRING (×18)
189	2218-7011	BRACKET, FIX (Model: HK660)
190	2218-R0130	BRACKET, FIX (×2)
191	2459-3004511	RIVET, PLASTIC (×8)
193	2327-R0130062	SCREW, BND+ (3×6 mm) (×2)
196	2347-R0130062	SCREW, BND T+ (3×6 mm) (×11)
197	2347-R0130062	SCREW, BND T+ (3×6 mm) (×10)
198	2347-R0130062	SCREW, BND T+ (3×6 mm) (×7)
199	2347-R0130084	SCREW, BND T+ (3×8 mm) (×19) (Model: HK640)
199	2347-R0130084	SCREW, BND T+ (3×8 mm) (×21) (Model: HK660)
202	2347-R0130102	SCREW, BND T+ (3×10 mm) (×7)
203	2347-401027	SCREW, BND T+ (4×10 mm) (×4)
204	2347-R0140064	SCREW, BND T+ (4×6 mm) (×4)
206	2347-R0126082	SCREW, BND T+ (2.6×8 mm)
207	2347-R0130162	SCREW, BND T+ (3×16 mm) (×4)
210	2557-F301426	SCREW, B SPW+ (3×14 mm) (×9) (Model: HK640)
210	2557-F301426	SCREW, B SPW+ (3×14 mm) (×10) (Model: HK660)
213	2412-4022	WASHER, SPRG (×4)
214	2401-0472	WASHER, METAL (×4)

P.C. BOARDS

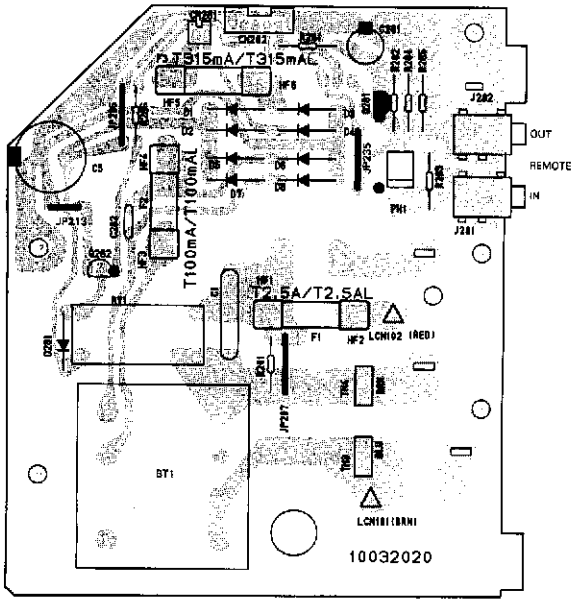
PCB-5 CPU P.C.BOARD



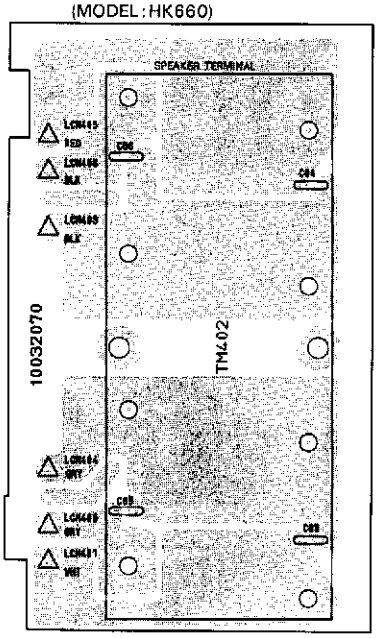
PCB-6 I/O P.C.BOARD (MODEL: HK640)



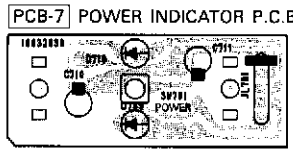
PCB-6 I/O P.C.BOARD (MODEL: HK660)



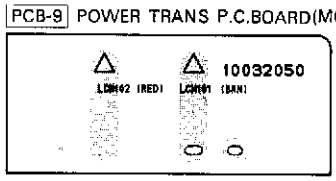
PCB-4 SP TERMINAL P.C.BOARD (MODEL: HK660)



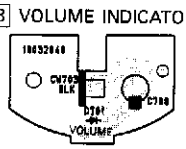
PCB-7 POWER INDICATOR P.C.BOARD



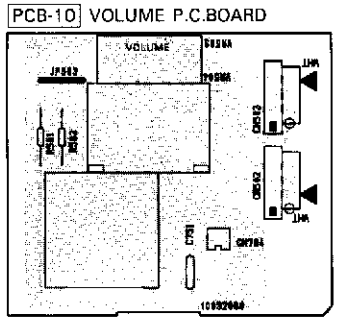
PCB-9 POWER TRANS P.C.BOARD(MODEL: HK640)



PCB-8 VOLUME INDICATOR P.C.BOARD

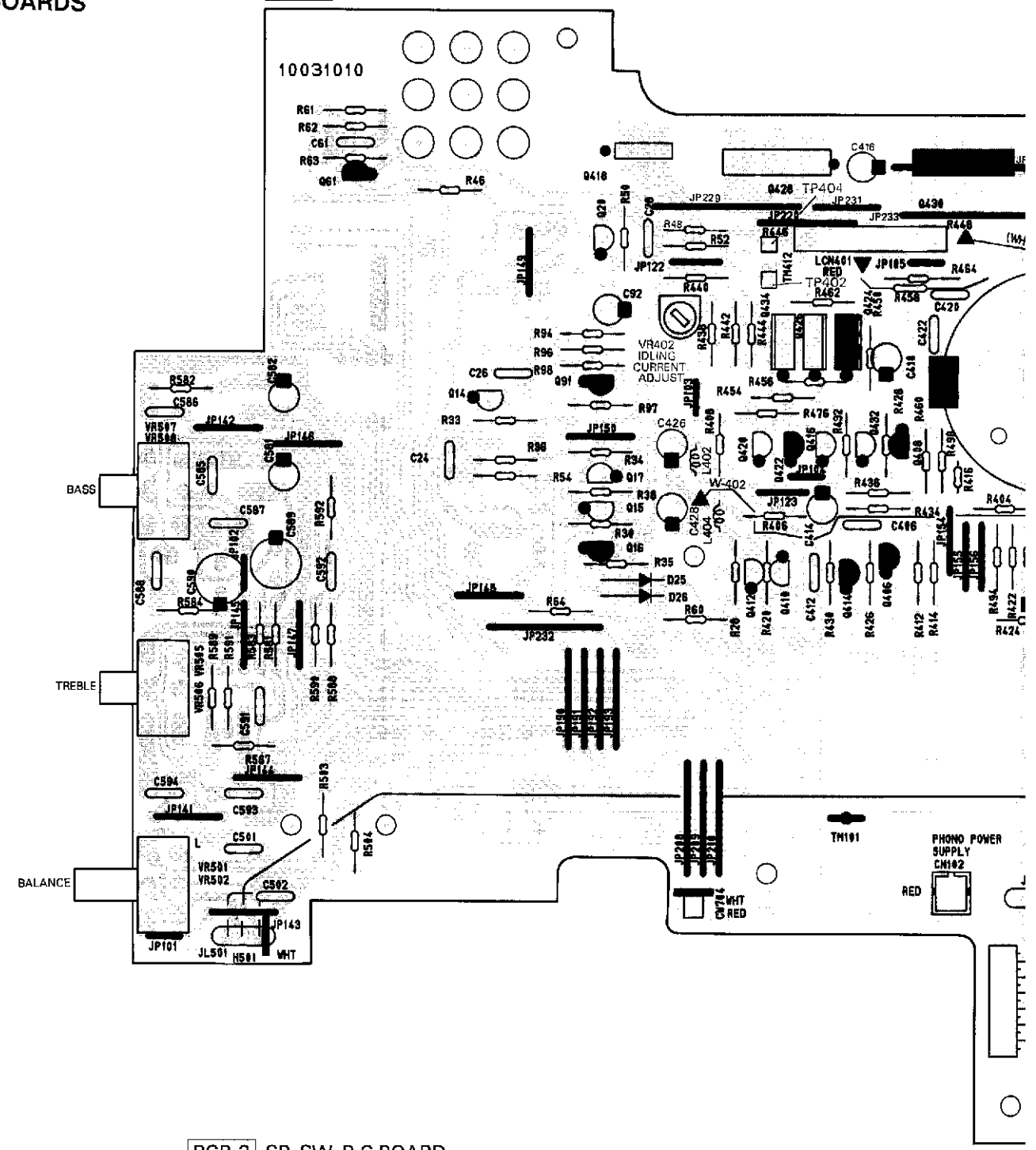


PCB-10 VOLUME P.C.BOARD

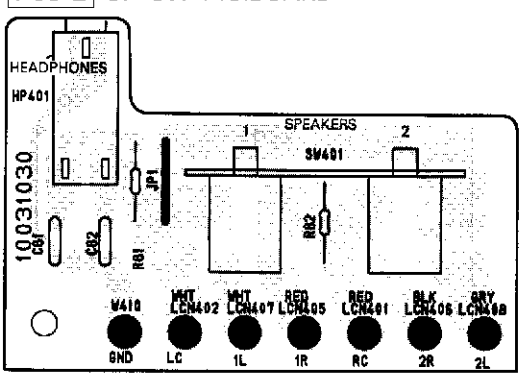


P.C. BOARDS

PCB-1 MAIN P.C.BOARD

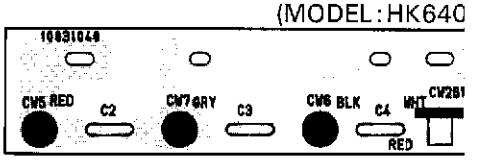


PCB-2 SP SW P.C.BOARD

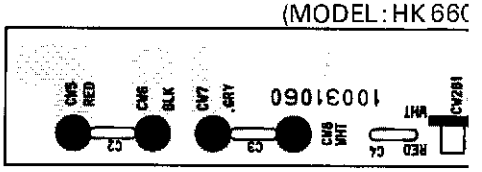


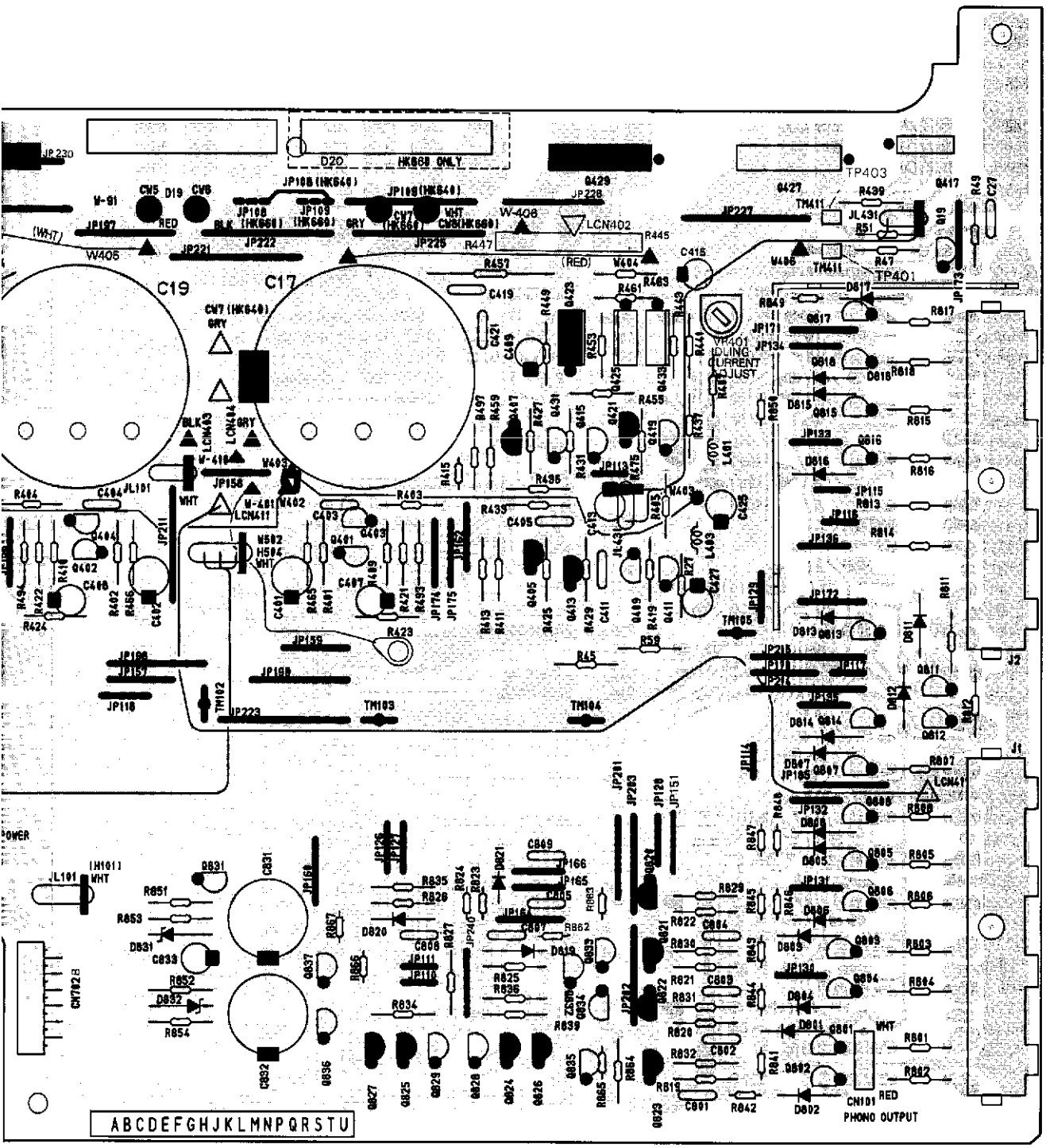
PCB-3 SECOND P.C.BOARD

(MODEL: HK640



(MODEL: HK660

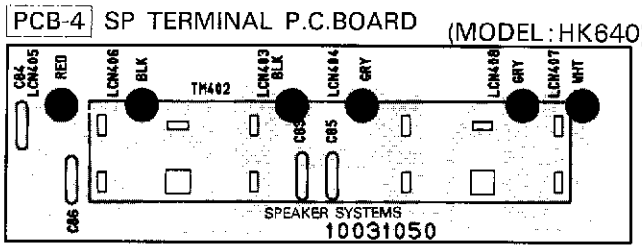




(HK640)

(HK660)

PCB-4 SP TERMINAL P.C.BOARD (MODEL:HK640)



ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description
		PCB-1 MAIN P.C. BOARD	
		CAPACITORS	
724 ⚠	C17	5341-S45GM159	CAP, ELE 15000U/63V (Model: HK640)
724 ⚠	C17	5341-S45GM189	CAP, ELE 18000U/63V (Model: HK660)
724 ⚠	C19	5341-S45GM159	CAP, ELE 15000U/63V (Model: HK640)
724 ⚠	C19	5341-S45GM189	CAP, ELE 18000U/63V (Model: HK660)
691	C24	5354-104593	CAP, MYL .1U
693	C26	5354-104593	CAP, MYL .1U
692	C27	5354-124593	CAP, MYL .12U
692	C28	5354-124593	CAP, MYL .12U
701	C61	5359-S010J332	CAP, PPP 3300P
694	C92	5345-476F041	CAP, MINI ELE 47U/50V
601	C401	5345-S29AM227	CAP, MINI ELE 220U/6.3V
601	C402	5345-S29AM227	CAP, MINI ELE 220U/6.3V
610	C403	5359-S010K221	CAP, PPP 220P
610	C404	5359-S010K221	CAP, PPP 220P
602	C405	5353-020933	CAP, MCA 2P
602	C406	5353-020933	CAP, MCA 2P
603	C407	5345-S29BM107	CAP, MINI ELE 100U/10V
603	C408	5345-S29BM107	CAP, MINI ELE 100U/10V
607	C409	5345-S29FM106	CAP, MINI ELE 10U/50V
607	C410	5345-S29FM106	CAP, MINI ELE 10U/50V
606	C411	5353-070933	CAP, MCA 7P
606	C412	5353-070933	CAP, MCA 7P
604	C413	5345-S29CM106	CAP, MINI ELE 10U/16V
604	C414	5345-S29CM106	CAP, MINI ELE 10U/16V
609	C415	5345-S25JM106	CAP, MINI ELE 10U/100V
609	C416	5345-S25JM106	CAP, MINI ELE 10U/100V
605	C419	5354-224593	CAP, MYL .22U
605	C420	5354-224593	CAP, MYL .22U
605	C421	5354-224593	CAP, MYL .22U
605	C422	5354-224593	CAP, MYL .22U
608	C425	5345-S29GM105	CAP, MINI ELE 1U/63V
608	C426	5345-S29GM105	CAP, MINI ELE 1U/63V
608	C427	5345-S29GM105	CAP, MINI ELE 1U/63V
608	C428	5345-S29GM105	CAP, MINI ELE 1U/63V
670	C501	5359-4715851	CAP, PPP 470P
670	C502	5359-4715851	CAP, PPP 470P
661	C581	5345-S29BM476	CAP, MINI ELE 47U/10V
661	C582	5345-S29BM476	CAP, MINI ELE 47U/10V
669	C585	5354-823593	CAP, MYL .082U
669	C586	5354-823593	CAP, MYL .082U
663	C587	5354-334593	CAP, MYL .33U
663	C588	5354-334593	CAP, MYL .33U
664	C589	5345-S29AM227	CAP, MINI ELE 220U/6.3V
664	C590	5345-S29AM227	CAP, MINI ELE 220U/6.3V
666	C591	5359-8225851	CAP, PPP 8200P
666	C592	5359-8225851	CAP, PPP 8200P
668	C593	5354-563593	CAP, MYL .056U
668	C594	5354-563593	CAP, MYL .056U
877	C801	5352-S110J104	CAP, MTL .1U
877	C802	5352-S110J104	CAP, MTL .1U
877	C803	5352-S110J104	CAP, MTL .1U
877	C804	5352-S110J104	CAP, MTL .1U
879	C805	5352-S110J224	CAP, MTL .22U
879	C807	5352-S110J224	CAP, MTL .22U
879	C808	5352-S110J224	CAP, MTL .22U
877	C809	5352-S110J104	CAP, MTL .1U
880	C831	5345-S25GM337	CAP, MINI ELE 330U/63V
880	C832	5345-S25GM337	CAP, MINI ELE 330U/63V
878	C833	5345-107D041	CAP, MINI ELE 100U/25V
		RESISTORS	
702	R27	5130-R030J104	RES, CBN 1/2P 100K
702	R28	5130-R030J104	RES, CBN 1/2P 100K
706	R30	5130-R030J683	RES, CBN 1/2P 68K
702	R33	5130-R030J104	RES, CBN 1/2P 100K
704	R34	5130-R030J472	RES, CBN 1/2P 4.7K
705	R35	5130-R030J223	RES, CBN 1/2P 22K
705	R36	5130-R030J223	RES, CBN 1/2P 22K
706	R38	5130-R030J683	RES, CBN 1/2P 68K
709	R45	5130-R030J682	RES, CBN 1/2P 6.8K
709	R46	5130-R030J682	RES, CBN 1/2P 6.8K
710	R47	5130-R030J222	RES, CBN 1/2P 2.2K (Model: HK640)
710	R47	5130-R030J272	RES, CBN 1/2P 2.7K (Model: HK660)
710	R48	5130-R030J222	RES, CBN 1/2P 2.2K (Model: HK640)
710	R48	5130-R030J272	RES, CBN 1/2P 2.7K (Model: HK660)
711	R49	5130-R030J821	RES, CBN 1/2P 820
711	R50	5130-R030J821	RES, CBN 1/2P 820
710	R51	5130-R030J222	RES, CBN 1/2P 2.2K (Model: HK640)
710	R51	5130-R030J272	RES, CBN 1/2P 2.7K (Model: HK660)
710	R52	5130-R030J222	RES, CBN 1/2P 2.2K (Model: HK640)
710	R52	5130-R030J272	RES, CBN 1/2P 2.7K (Model: HK660)
705	R54	5130-R030J223	RES, CBN 1/2P 22K
712	R59	5130-R030J123	RES, CBN 1/2P 12K
712	R60	5130-R030J123	RES, CBN 1/2P 12K
715	R61	5130-R030J152	RES, CBN 1/2P 1.5K
716	R62	5130-R030J473	RES, CBN 1/2P 47K
717	R63	5130-R030J223	RES, CBN 1/2P 22K
718	R64	5130-R030J103	RES, CBN 1/2P 10K
714	R94	5130-R030J104	RES, CBN 1/2P 100K
704	R96	5130-R030J472	RES, CBN 1/2P 4.7K
705	R97	5130-R030J223	RES, CBN 1/2P 22K
713	R98	5130-R030J333	RES, CBN 1/2P 33K
631	R401	5130-R030J683	RES, CBN 1/2P 68K
631	R402	5130-R030J683	RES, CBN 1/2P 68K
627	R403	5130-R030J562	RES, CBN 1/2P 5.6K
627	R404	5130-R030J562	RES, CBN 1/2P 5.6K
643 ⚠	R405	5102-3R35116	RES, FUSE 3.3
643 ⚠	R406	5102-3R35116	RES, FUSE 3.3
643 ⚠	R407	5102-3R35116	RES, FUSE 3.3
643 ⚠	R408	5102-3R35116	RES, FUSE 3.3
633	R409	5130-R030J473	RES, CBN 1/2P 47K
633	R410	5130-R030J473	RES, CBN 1/2P 47K
634 ⚠	R411	5102-1025116	RES, FUSE 1K
634 ⚠	R412	5102-1025116	RES, FUSE 1K
632 ⚠	R413	5102-1024715	RES, FUSE 1K
632 ⚠	R414	5102-1024715	RES, FUSE 1K
629 ⚠	R415	5102-S081J470	RES, FUSE 47
629 ⚠	R416	5102-S081J470	RES, FUSE 47
635	R419	5130-R030J271	RES, CBN 1/2P 270
635	R420	5130-R030J271	RES, CBN 1/2P 270
636	R421	5130-R030J224	RES, CBN 1/2P 220K
636	R422	5130-R030J224	RES, CBN 1/2P 220K
637	R423	5130-R030J121	RES, CBN 1/2P 120 (Model: HK640)
637	R423	5130-R030J111	RES, CBN 1/2P 110 (Model: HK660)
637	R424	5130-R030J121	RES, CBN 1/2P 120 (Model: HK640)
637	R424	5130-R030J111	RES, CBN 1/2P 110 (Model: HK660)
645 ⚠	R425	5102-8205116	RES, FUSE 82
645 ⚠	R426	5102-8205116	RES, FUSE 82
648 ⚠	R427	5102-6805116	RES, FUSE 68
648 ⚠	R428	5102-6805116	RES, FUSE 68
645 ⚠	R429	5102-8205116	RES, FUSE 82
645 ⚠	R430	5102-8205116	RES, FUSE 82
645 ⚠	R431	5102-8205116	RES, FUSE 82
645 ⚠	R432	5102-8205116	RES, FUSE 82
638	R433	5130-R030J183	RES, CBN 1/2P 18K
638	R434	5130-R030J183	RES, CBN 1/2P 18K
638	R435	5130-R030J183	RES, CBN 1/2P 18K
638	R436	5130-R030J183	RES, CBN 1/2P 18K
656	R437	5130-R030J182	RES, CBN 1/2P 1.8K
656	R438	5130-R030J182	RES, CBN 1/2P 1.8K
640	R439	5130-R030J681	RES, CBN 1/2P 680
640	R440	5130-R030J681	RES, CBN 1/2P 680
639	R441	5130-R030J122	RES, CBN 1/2P 1.2K
639	R442	5130-R030J122	RES, CBN 1/2P 1.2K
655	R443	5130-R030J122	RES, CBN 1/2P 1.2K
655	R444	5130-R030J122	RES, CBN 1/2P 1.2K
650	R445	5275-S040JR22	RES, CEM 5P .22
650	R446	5275-S040JR22	RES, CEM 5P .22
650	R447	5275-S040JR22	RES, CEM 5P .22
650	R448	5275-S040JR22	RES, CEM 5P .22
646 ⚠	R449	5102-2214715	RES, FUSE 220
646 ⚠	R450	5102-2214715	RES, FUSE 220

Ser. No.	Ref. No.	Part No.	Description
644	⚠ R453	5102-1014715	RES, FUSE 100
644	⚠ R454	5102-1014715	RES, FUSE 100
644	⚠ R455	5102-1014715	RES, FUSE 100
644	⚠ R456	5102-1014715	RES, FUSE 100
652	R457	5173-3R3583	RES, MTL 2P 3.3
652	R458	5173-3R3583	RES, MTL 2P 3.3
641	R459	5130-R030J332	RES, CBN 1/2P 3.3K
641	R460	5130-R030J332	RES, CBN 1/2P 3.3K
649	⚠ R461	5102-4R75116	RES, FUSE 4.7
649	⚠ R462	5102-4R75116	RES, FUSE 4.7
649	⚠ R463	5102-4R75116	RES, FUSE 4.7
649	⚠ R464	5102-4R75116	RES, FUSE 4.7
642	R465	5130-R030J331	RES, CBN 1/2P 330
642	R466	5130-R030J331	RES, CBN 1/2P 330
647	⚠ R475	5102-3914715	RES, FUSE 390
647	⚠ R476	5102-3914715	RES, FUSE 390
642	R493	5130-R030J331	RES, CBN 1/2P 330
642	R494	5130-R030J331	RES, CBN 1/2P 330
633	R497	5130-R030J473	RES, CBN 1/2P 47K
633	R498	5130-R030J473	RES, CBN 1/2P 47K
671	R503	5130-R030J102	RES, CBN 1/2P 1K
671	R504	5130-R030J102	RES, CBN 1/2P 1K
672	R581	5130-R030J822	RES, CBN 1/2P 8.2K
672	R582	5130-R030J822	RES, CBN 1/2P 8.2K
673	R583	5130-R030J152	RES, CBN 1/2P 1.5K
673	R584	5130-R030J152	RES, CBN 1/2P 1.5K
674	R587	5130-R030J271	RES, CBN 1/2P 270
674	R588	5130-R030J271	RES, CBN 1/2P 270
675	R589	5130-R030J335	RES, CBN 1/2P 3.3M
675	R590	5130-R030J335	RES, CBN 1/2P 3.3M
676	R591	5130-R030J122	RES, CBN 1/2P 1.2K
676	R592	5130-R030J122	RES, CBN 1/2P 1.2K
896	R801	5130-R030J102	RES, CBN 1/2P 1K
896	R802	5130-R030J102	RES, CBN 1/2P 1K
896	R803	5130-R030J102	RES, CBN 1/2P 1K
896	R804	5130-R030J102	RES, CBN 1/2P 1K
896	R805	5130-R030J102	RES, CBN 1/2P 1K
896	R806	5130-R030J102	RES, CBN 1/2P 1K
896	R807	5130-R030J102	RES, CBN 1/2P 1K
896	R808	5130-R030J102	RES, CBN 1/2P 1K
896	R811	5130-R030J102	RES, CBN 1/2P 1K
896	R812	5130-R030J102	RES, CBN 1/2P 1K
896	R813	5130-R030J102	RES, CBN 1/2P 1K
897	R814	5130-R030J102	RES, CBN 1/2P 1K
897	R815	5130-R030J102	RES, CBN 1/2P 1K
897	R816	5130-R030J102	RES, CBN 1/2P 1K
897	R817	5130-R030J102	RES, CBN 1/2P 1K
897	R818	5130-R030J102	RES, CBN 1/2P 1K
901	R819	5130-R030J225	RES, CBN 1/2P 2.2M
901	R820	5130-R030J225	RES, CBN 1/2P 2.2M
901	R821	5130-R030J225	RES, CBN 1/2P 2.2M
901	R822	5130-R030J225	RES, CBN 1/2P 2.2M
893	R823	5130-R010J225	RES, CBN 1/6P 2.2M
898	R824	5130-R010J225	RES, CBN 1/6P 2.2M
899	R825	5130-R030J155	RES, CBN 1/2P 1.5M
899	R826	5130-R030J155	RES, CBN 1/2P 1.5M
901	R827	5130-R030J225	RES, CBN 1/2P 2.2M
900	R829	5130-R030J104	RES, CBN 1/2P 100K
900	R830	5130-R030J104	RES, CBN 1/2P 100K
900	R831	5130-R030J104	RES, CBN 1/2P 100K
900	R832	5130-R030J104	RES, CBN 1/2P 100K
900	R834	5130-R030J104	RES, CBN 1/2P 100K
900	R835	5130-R030J104	RES, CBN 1/2P 100K
900	R836	5130-R030J104	RES, CBN 1/2P 100K
900	R839	5130-R030J104	RES, CBN 1/2P 100K
902	R841	5130-R010J225	RES, CBN 1/6P 2.2M
902	R842	5130-R010J225	RES, CBN 1/6P 2.2M
902	R843	5130-R010J225	RES, CBN 1/6P 2.2M
902	R844	5130-R010J225	RES, CBN 1/6P 2.2M
902	R845	5130-R010J225	RES, CBN 1/6P 2.2M
902	R846	5130-R010J225	RES, CBN 1/6P 2.2M
902	R847	5130-R010J225	RES, CBN 1/6P 2.2M
902	R848	5130-R010J225	RES, CBN 1/6P 2.2M
902	R849	5130-R010J225	RES, CBN 1/6P 2.2M
902	R850	5130-R010J225	RES, CBN 1/6P 2.2M
903	⚠ R851	5102-2205116	RES, FUSE 22
906	R852	5130-R030J392	RES, CBN 1/2P 3.9K (Model: HK640)
906	R852	5130-R030J472	RES, CBN 1/2P 4.7K (Model: HK660)
904	R853	5130-R030J103	RES, CBN 1/2P 10K
905	R854	5130-R030J222	RES, CBN 1/2P 2.2K
895	R862	5130-R010J102	RES, CBN 1/6P 1K
895	R863	5130-R010J102	RES, CBN 1/6P 1K
894	R864	5130-R030J102	RES, CBN 1/2P 1K
895	R865	5130-R010J102	RES, CBN 1/6P 1K
895	R866	5130-R010J102	RES, CBN 1/6P 1K
895	R867	5130-R010J102	RES, CBN 1/6P 1K
		TRANSISTORS	
696	Q14	5613-1740S(S)	XISTOR, NPN R
696	Q15	5613-1740S(S)	XISTOR, NPN R
697	Q16	5611-933S(S)	XISTOR, PNP R
696	Q17	5613-1740S(S)	XISTOR, NPN R
698	Q19	5613-2240(BL)	XISTOR, NPN R
698	Q20	5613-2240(BL)	XISTOR, NPN R
699	Q61	5611-970(BL)	XISTOR, PNP R
697	Q91	5611-933S(S)	XISTOR, PNP R
613	Q401	5613-1775(F)	XISTOR, NPN R
613	Q402	5613-1775(F)	XISTOR, NPN R
613	Q403	5613-1775(F)	XISTOR, NPN R
613	Q404	5613-1775(F)	XISTOR, NPN R
614	Q405	5612-646A(C)	XISTOR, PNP A
614	Q406	5612-646A(C)	XISTOR, PNP A
614	Q407	5612-646A(C)	XISTOR, PNP A
614	Q408	5612-646A(C)	XISTOR, PNP A
615	Q409	5613-2240(BL)	XISTOR, NPN R
615	Q410	5613-2240(BL)	XISTOR, NPN R
615	Q411	5613-2240(BL)	XISTOR, NPN R
615	Q412	5613-2240(BL)	XISTOR, NPN R
614	Q413	5612-646A(C)	XISTOR, PNP A
614	Q414	5612-646A(C)	XISTOR, PNP A
616	Q415	5614-666A(C)	XISTOR, NPN A
616	Q416	5614-666A(C)	XISTOR, NPN A
617	Q417	5613-3423(Y)	XISTOR, NPN R
617	Q418	5613-3423(Y)	XISTOR, NPN R
618	Q419	5614-667A(C)	XISTOR, NPN A
618	Q420	5614-667A(C)	XISTOR, NPN A
619	Q421	5612-647A(C)	XISTOR, PNP A
619	Q422	5612-647A(C)	XISTOR, PNP A
620	Q423	5611-1837(Y)	XISTOR, PNP R
620	Q424	5611-1837(Y)	XISTOR, PNP R
621	Q425	5613-4793(Y)	XISTOR, NPN R
621	Q426	5613-4793(Y)	XISTOR, NPN R
623	Q427	5613-3907(O)	XISTOR, NPN R (Model: HK640)
623	Q427	5613-3281(O)	XISTOR, NPN R (Model: HK660)
623	Q428	5613-3907(O)	XISTOR, NPN R (Model: HK640)
623	Q428	5613-3281(O)	XISTOR, NPN R (Model: HK660)
624	Q429	5611-1516(O)	XISTOR, PNP R (Model: HK640)
624	Q429	5611-1302(O)	XISTOR, PNP R (Model: HK660)
624	Q430	5611-1516(O)	XISTOR, PNP R (Model: HK640)
624	Q430	5611-1302(O)	XISTOR, PNP R (Model: HK660)
612	Q431	5613-1775(F)	XISTOR, NPN R
612	Q432	5613-1775(F)	XISTOR, NPN R
617	Q433	5613-3423(Y)	XISTOR, NPN R
617	Q434	5613-3423(Y)	XISTOR, NPN R
887	Q801	5616-2SK364BL	FET, N-CH
887	Q802	5616-2SK364BL	FET, N-CH
887	Q803	5616-2SK364BL	FET, N-CH
887	Q804	5616-2SK364BL	FET, N-CH
887	Q805	5616-2SK364BL	FET, N-CH
887	Q806	5616-2SK364BL	FET, N-CH
887	Q807	5616-2SK364BL	FET, N-CH
887	Q808	5616-2SK364BL	FET, N-CH
887	Q811	5616-2SK364BL	FET, N-CH
887	Q812	5616-2SK364BL	FET, N-CH
889	Q813	5616-2SK364(V	FET, N-CH
889	Q814	5616-2SK364(V	FET, N-CH
887	Q815	5616-2SK364BL	FET, N-CH
888	Q816	5616-2SK364BL	FET, N-CH
888	Q817	5616-2SK364BL	FET, N-CH
888	Q818	5616-2SK364BL	FET, N-CH

Ser. No.	Ref. No.	Part No.	Description	
890	Q820	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q821	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q822	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q823	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q824	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q825	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q826	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
890	Q827	5611-R01D4747	XISTOR, PNP R, RN2204 or DTA144ES or UN4113	
891	Q828	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
891	Q829	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
885	Q831	5613-2320L(F)	XISTOR, NPN R	
892	Q832	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
892	Q833	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
892	Q834	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
892	Q835	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
892	Q836	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
892	Q837	5613-R01D4747	XISTOR, NPN R, RN1204 or DTC144ES or UN4213	
			DIODES	
725 ⚠	D19	5685-D5SB20	SILICON, BRIG	
725 ⚠	D20	5685-D5SB20	SILICON, BRIG	(Model: HK660)
695	D25	5631-1S2473	DIODE, DET	
695	D26	5631-1S2473	DIODE, DET	
882	D801	5631-1S2473	DIODE, DET	
882	D802	5631-1S2473	DIODE, DET	
882	D803	5631-1S2473	DIODE, DET	
882	D804	5631-1S2473	DIODE, DET	
882	D805	5631-1S2473	DIODE, DET	
882	D806	5631-1S2473	DIODE, DET	
882	D807	5631-1S2473	DIODE, DET	
882	D808	5631-1S2473	DIODE, DET	
882	D811	5631-1S2473	DIODE, DET	
882	D812	5631-1S2473	DIODE, DET	
882	D813	5631-1S2473	DIODE, DET	
883	D814	5631-1S2473	DIODE, DET	
883	D815	5631-1S2473	DIODE, DET	
883	D816	5631-1S2473	DIODE, DET	
883	D817	5631-1S2473	DIODE, DET	
883	D818	5631-1S2473	DIODE, DET	
883	D819	5631-1S2473	DIODE, DET	
883	D820	5631-1S2473	DIODE, DET	
886	D821	5631-1SS133	DIODE, DET	
884	D831	5635-HZ20-2L	DIODE, ZENER	
884	D832	5635-HZ20-2L	DIODE, ZENER	
			CONTROLS	
654	VR401	5101-S0801301	RES, SEMI FIX 300, IDLING CURRENT	
654	VR402	5101-S0801301	RES, SEMI FIX 300, IDLING CURRENT	
824	VR501/502	5113-S2005104	RES, V CBN 16 100K, BALANCE	
822	VR505/506	5113-S2101503	RES, V CBN 16 50K, TREBLE	
820	VR507/508	5113-S2102104	RES, V CBN 16 100K, BASS	
			MISCELLANEOUS	
805	CN101	4443-030185	CONNECTOR, 3 PIN	
783	CN102	4443-0201140	CONNECTOR, 2 PIN	
809	CN702B	4443-05501013	CONNECTOR, 13 PIN	

Ser. No.	Ref. No.	Part No.	Description	
792	CW5	4163-0135025	CONNECTOR W/W, 1 PIN	(Model: HK640)
792	CW5	4163-0140025	CONNECTOR W/W, 1 PIN	(Model: HK660)
793	CW6	4163-0135024	CONNECTOR W/W, 1 PIN	(Model: HK640)
793	CW6	4163-0140024	CONNECTOR W/W, 1 PIN	(Model: HK660)
794	CW7	4163-0135026	CONNECTOR W/W, 1 PIN	(Model: HK640)
794	CW7	4163-0140026	CONNECTOR W/W, 1 PIN	(Model: HK660)
795	CW8	4163-0140027	CONNECTOR W/W, 1 PIN	(Model: HK660)
796	CW704	4163-S0202151	CONNECTOR W/W, 2 PIN	
813	J1	4489-04303008	PIN JACK, MLT, AUX/VIDEO/TUNER/CD	
813	J2	4489-04303008	PIN JACK, MLT, TAPE 1/TAPE 2 IN/OUT	
799	JL101	4242-R0503101	JUMPER LEAD, 3 WIRE	
787	JL431	4132-R0202101	CORD, 2C, 2 WIRE	
779	JL501	4242-R0503141	JUMPER LEAD, 3 WIRE	
628	L401	5597-45502	CORE, BEADS	
628	L402	5597-45502	CORE, BEADS	
628	L403	5597-45502	CORE, BEADS	
628	L404	5597-45502	CORE, BEADS	
763	LCN401	4163-0140025	CONNECTOR W/W, 1 PIN	
764	LCN402	4163-0140027	CONNECTOR W/W, 1 PIN	
761	LCN403	4163-0140024	CONNECTOR W/W, 1 PIN	
762	LCN404	4163-0140026	CONNECTOR W/W, 1 PIN	
810	LCN411	4163-0117024	CONNECTOR W/W, 1 PIN	
782	TM101	4214-262	TERMINAL	
782	TM102	4214-262	TERMINAL	
782	TM103	4214-262	TERMINAL	
782	TM104	4214-262	TERMINAL	
782	TM105	4214-262	TERMINAL	
784	TM411	4214-11022	TERMINAL	
784	TM412	4214-11022	TERMINAL	
769	W401	4122-00320900	WIRE	(Model: HK640)
769	W401	4122-00310900	WIRE	(Model: HK660)
770	W402	4122-00280121	WIRE	
770	W403	4122-00280121	WIRE	
771	W404	4122-00322121	WIRE	
772	W405	4122-00320121	WIRE	
773	W406	4122-00280700	WIRE	
798	W410	4122-00280401	WIRE	
800	W502	4142-00151351	SHLD WIRE, 2C	
774		4211-4	LUG, (W401)	
780		2240-Z032	HOLDER, H101(JL101) H501(JL501)	
781		2240-Z031	HOLDER, H504(W-502)	

[redacted]

			CAPACITORS	
758	C81	5359-1015851	CAP, PPP 100P	
758	C82	5359-1015851	CAP, PPP 100P	
			RESISTORS	
760	R81	5130-R030J471	RES, CBN 1/2P 470	
760	R82	5130-R030J471	RES, CBN 1/2P 470	
			MISCELLANEOUS	
829	HP401	4451-51501	JACK, 1P, HEADPHONES	
765	LCN405	4163-0140025	CONNECTOR W/W, 1 PIN	
767	LCN406	4163-0140024	CONNECTOR W/W, 1 PIN	
766	LCN407	4163-0140027	CONNECTOR W/W, 1 PIN	
768	LCN408	4163-0140026	CONNECTOR W/W, 1 PIN	
817	SW401	4431-S0319204	SWITCH, PUSH, SPEAKERS 1/2	

Ser. No.	Ref. No.	Part No.	Description
PCB-3 SECOND P.C. BOARD			
		CAPACITORS	
721	C2	5352-S060K104	CAP, MTL .1U
721	C3	5352-S060K104	CAP, MTL .1U
722	C4	5354-104593	CAP, MYL .1U
		MISCELLANEOUS	
790	CW281	4163-S0202301	CONNECTOR W/W, 2 PIN
PCB-4 SP TERMINAL P.C. BOARD			
		CAPACITORS	
657	C83	5359-S010K151	CAP, PPP 150P
657	C84	5359-S010K151	CAP, PPP 150P
657	C85	5359-S010K151	CAP, PPP 150P
657	C86	5359-S010K151	CAP, PPP 150P
		MISCELLANEOUS	
812	TM402	4214-239	TERMINAL, SPEAKER SYSTEM 1/2 (Model: HK640)
812	TM402	4214-221	TERMINAL, SPEAKER SYSTEM 1/2 (Model: HK660)
PCB-5 CPU P.C. BOARD			
		CAPACITORS	
841	C703	5345-S35BM107	CAP, MINI ELE 100U/10V
842	C704	5345-S35BM107	CAP, MINI ELE 100U/10V
841	C705	5345-S35BM107	CAP, MINI ELE 100U/10V
844	C706	5345-S35BM227	CAP, MINI ELE 220U/10V
844	C707	5345-S35BM227	CAP, MINI ELE 220U/10V
842	C712	5345-S35BM107	CAP, MINI ELE 100U/10V
845	C715	5354-104593	CAP, MYL .1U
845	C716	5354-104593	CAP, MYL .1U
		RESISTORS	
861	R701	5130-R030J331	RES, CBN 1/2P 330
862	R702	5130-R030J471	RES, CBN 1/2P 470
862	R704	5130-R030J471	RES, CBN 1/2P 470
862	R705	5130-R030J471	RES, CBN 1/2P 470
862	R706	5130-R030J471	RES, CBN 1/2P 470
863	R707	5130-R030J561	RES, CBN 1/2P 560
862	R708	5130-R030J471	RES, CBN 1/2P 470
864	R709	5130-R030J105	RES, CBN 1/2P 1M
866	R711	5130-R030J103	RES, CBN 1/2P 10K
862	R712	5130-R030J471	RES, CBN 1/2P 470
867	R713	5130-R030J102	RES, CBN 1/2P 1K
868 ⚠	R714	5102-4R75116	RES, FUSE 4.7
869	R715	5130-R030J392	RES, CBN 1/2P 3.9K
865	R716	5130-R030J101	RES, CBN 1/2P 100
862	R717	5130-R030J471	RES, CBN 1/2P 470
862	R718	5130-R030J471	RES, CBN 1/2P 470
867	R719	5130-R030J102	RES, CBN 1/2P 1K
849	R722	5130-R030J103	RES, CBN 1/2P 10K
866	R723	5130-R030J103	RES, CBN 1/2P 10K
847	R725	5130-R030J104	RES, CBN 1/2P 100K
		INTEGRATED CIRCUITS	
855	IC701	5654-T7C2BF-1	IC, DIGITAL
856	IC702	5653-LB1639	IC, LINEAR
		TRANSISTORS	
850	Q701	5613-R01D1000	XISTOR, NPN R, RN1211 or DTC114TS or UN4215
857	Q702	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
857	Q704	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
857	Q705	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
857	Q706	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
857	Q707	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
857	Q708	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
857	Q709	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
858	Q710	5611-R01D1010	XISTOR, PNP R, RN2202 or DTA114ES or UN4111
859	Q711	5613-1740S(S)	XISTOR, NPN R
860	Q712	5614-2012	XISTOR, NPN A
		DIODES	
832	D702	5637-S2410E6A	LED, AUX
831	D704	5637-S2410E1A	LED, VIDEO
831	D705	5637-S2410E1A	LED, TUNER
832	D706	5637-S2410E6A	LED, CD
833	D707	5637-S2210S1	LED, TAPE 2 MON
832	D708	5637-S2410E6A	LED, TAPE 1/COPY
852	D712	5631-1S2473	DIODE, DET
853	D713	5635-HZ6A2L	DIODE, ZENER
854	D714	5635-HZ3B2	DIODE, ZENER
		MISCELLANEOUS	
846	CF701	5693-FC4004A4	OSC, CER
808	CN702A	4443-05401013	CONNECTOR, 13 PIN
807	CN703	4443-0201140	CONNECTOR, 2 PIN
791	CW282	4163-S0206451	CONNECTOR W/W, 6 PIN
802	JL701	4242-R0505141	JUMPER LEAD, 5 WIRE
870	RCV701	6143-00804	RECEIVER UNIT, REMOTE SENSOR
818	SW702	4437-01301	SWITCH, PU-TC, AUX
818	SW704	4437-01301	SWITCH, PU-TC, VIDEO
818	SW705	4437-01301	SWITCH, PU-TC, CD
818	SW706	4437-01301	SWITCH, PU-TC, TUNER
818	SW707	4437-01301	SWITCH, PU-TC, TAPE 1/COPY
818	SW708	4437-01301	SWITCH, PU-TC, TAPE 1 MON
851	W715	4122-00220550	WIRE, LUG (Model: HK640)
851	W715	4122-00270550	WIRE, LUG (Model: HK660)
851	W716	4122-00220550	WIRE, LUG (Model: HK640)
851	W716	4122-00270550	WIRE, LUG (Model: HK660)
840		4211-4	LUG, (W715, 716) (×2)
871		2240-Z052	HOLDER, H701
PCB-6 I/O P.C. BOARD (MODEL: HK640)			
		CAPACITORS	
733	C5	5345-S25DM108	CAP, MINI ELE 1000U/25V
739	C281	5345-476D041	CAP, MINI ELE 47U/25V
		RESISTORS	
747	R281	5130-R030J470	RES, CBN 1/2P 47
748	R282	5130-R030J392	RES, CBN 1/2P 3.9K
749	R283	5130-R030J271	RES, CBN 1/2P 270
750	R284	5130-R030J473	RES, CBN 1/2P 47K
747	R285	5130-R030J470	RES, CBN 1/2P 47
		TRANSISTOR	
744	Q281	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN411L
		DIODES	
734 ⚠	D1	5632-S5566B	DIODE, RECT
734 ⚠	D2	5632-S5566B	DIODE, RECT
734 ⚠	D3	5632-S5566B	DIODE, RECT
734 ⚠	D4	5632-S5566B	DIODE, RECT
		MISCELLANEOUS	
803	CN281	4443-0201140	CONNECTOR, 2 PIN
804	CN282	4443-0601140	CONNECTOR, 6 PIN
727 ⚠	F1	5732-01601202	FUSE, T2A/T2AL 250V

Ser. No.	Ref. No.	Part No.	Description
728 ⚠	F3	5732-01601311	FUSE, T315mA/T315mAL 250V
729 ⚠	HF1	4472-04901	HOLDER, FUSE, F1
729 ⚠	HF2	4472-04901	HOLDER, FUSE, F1
729 ⚠	HF5	4472-04901	HOLDER, FUSE, F3
729 ⚠	HF6	4472-04901	HOLDER, FUSE, F3
814	J281	4451-00184	JACK, 1P, REMOTE IN
814	J282	4451-00184	JACK, 1P, REMOTE OUT
788	LCN101	4163-S5101150	CONNECTOR W/W, 1 PIN
789	LCN102	4163-S5201150	CONNECTOR W/W, 1 PIN
743	PH1	5624-PC817	PHOTO COUPLR
785 ⚠	TM3	4214-245	TERMINAL
785 ⚠	TM4	4214-245	TERMINAL

PCB-6 I/O P.C. BOARD (MODEL: HK660)

		CAPACITORS	
730 ⚠	C1	5352-1030958	CAP, MTL .01U
733	C5	5345-S25DM108	CAP, MINI ELE 1000U/25V
739	C281	5345-476D041	CAP, MINI ELE 47U/25V
740	C282	5354-104593	CAP, MYL .1U
		RESISTORS	
732 ⚠	R201	5130-R030J335	RES, CBN 1/2P 3.3M
747	R281	5130-R030J470	RES, CBN 1/2P 47
748	R282	5130-R030J392	RES, CBN 1/2P 3.9K
749	R283	5130-R030J271	RES, CBN 1/2P 270
750	R284	5130-R030J473	RES, CBN 1/2P 47K
747	R285	5130-R030J470	RES, CBN 1/2P 47
751	R286	5130-R030J102	RES, CBN 1/2P 1K
		TRANSISTORS	
744	Q281	5611-R01D0505	XISTOR, PNP R, RN2201 or DTA143ES or UN4215
745	Q282	5613-3246(H)	XISTOR, NPN R
		DIODES	
734 ⚠	D1	5632-S5566B	DIODE, RECT
734 ⚠	D2	5632-S5566B	DIODE, RECT
734 ⚠	D3	5632-S5566B	DIODE, RECT
734 ⚠	D4	5632-S5566B	DIODE, RECT
734 ⚠	D5	5632-S5566B	DIODE, RECT
734 ⚠	D6	5632-S5566B	DIODE, RECT
734 ⚠	D7	5632-S5566B	DIODE, RECT
734 ⚠	D8	5632-S5566B	DIODE, RECT
741	D281	5631-1S2473	DIODE, DET
		MISCELLANEOUS	
736 ⚠	BT1	5584-T1101	XFORMER, SUB POWER
803	CN281	4443-0201140	CONNECTOR, 2 PIN
804	CN282	4443-0601140	CONNECTOR, 6 PIN
727 ⚠	F1	5732-01601252	FUSE, T2.5A/T2.5AL 250V
726 ⚠	F2	5732-01601101	FUSE, T100mA/T100mAL 250V
728 ⚠	F3	5732-01601311	FUSE, T315mA/T315mAL 250V
729 ⚠	HF1	4472-04901	HOLDER, FUSE, F1
729 ⚠	HF2	4472-04901	HOLDER, FUSE, F1
729 ⚠	HF3	4472-04901	HOLDER, FUSE, F2
729 ⚠	HF4	4472-04901	HOLDER, FUSE, F2
729 ⚠	HF5	4472-04901	HOLDER, FUSE, F3
729 ⚠	HF6	4472-04901	HOLDER, FUSE, F3
814	J281	4451-00184	JACK, 1P, REMOTE IN
814	J282	4451-00184	JACK, 1P, REMOTE OUT
788 ⚠	LCN101	4163-S4901170	CONNECTOR W/W, 1 PIN
789 ⚠	LCN102	4163-S5001170	CONNECTOR W/W, 1 PIN
743	PH1	5624-PC817	PHOTO COUPLR
731 ⚠	RY1	4331-02601	RELAY, DC
785 ⚠	TM3	4214-245	TERMINAL
785 ⚠	TM4	4214-245	TERMINAL

Ser. No.	Ref. No.	Part No.	Description

PCB-7 POWER IND P.C. BOARD

		CAPACITORS	
848	C710	5345-S35CM106	CAP, MINI ELE 10U/16V
848	C711	5345-S35CM106	CAP, MINI ELE 10U/16V
		DIODES	
837	D709	5637-S2410E1A	LED, POWER
837	D710	5637-S2410E1A	LED, POWER
		MISCELLANEOUS	
816	SW701	4437-00704	SWITCH, PU-TC, POWER

PCB-8 VR IND P.C. BOARD

		CAPACITOR	
843	C708	5345-S35CM106	CAP, MINI ELE 10U/16V
		DIODE	
835	D701	5637-SLR33MC3	LED, VOLUME
		MISCELLANEOUS	
786	CW703	4163-01524002	CONNECTOR W/W, 2 PIN

PCB-10 VR P.C. BOARD

		CAPACITOR	
828	C751	5354-104593	CAP, MYL .1U
		RESISTORS	
830	R501	5130-R030J152	RES, CBN 1/2P 1.5K
830	R502	5130-R030J152	RES, CBN 1/2P 1.5K
		CONTROLS	
826	VR503/504	6161-00902	VR BLOCK, 30K, VOLUME (MOTOR DRIVER)
		MISCELLANEOUS	
778	CN502	4443-030185	CONNECTOR, 3 PIN
778	CN503	4443-030185	CONNECTOR, 3 PIN
797	CN704	4443-0201140	CONNECTOR, 2 PIN

CHASSIS MISCELLANEOUS

		MISCELLANEOUS		
801	JL702	4242-S0313251	JUMPER LEAD, 13 WIRE	
811 ⚠	PG1	4161-09801192	CORD W/PLUG	
723 ⚠	PT1	5584-T4403	XFORMER, POWER	(Model: HK640)
723 ⚠	PT1	5584-T4504	XFORMER, POWER	(Model: HK660)
924	PCB-9	4551-10032050	P.C. BOARD, PR	

PACKING PARTS LIST

021	1756-23601	LABEL, (CH) LABEL, CARTON BOX (I)	
108	1111-1620J152	OWNER GUIDE	
116	1756-03108	LABEL, (I) LABEL, CARTON (IB) (I)	
116	1756-03101	LABEL, (W) LABEL, CARTON (WB)	
120	1241-R0160601	POLYETHY BAG, SET	
121	1241-R0123351	POLYETHY BAG, IB	
124	1221-867167	CARTON BOX	(Model: HK640)
124	1221-857167	CARTON BOX	(Model: HK660)
126	1222-7331	CUSHION, L	
127	1222-7332	CUSHION, R	
128	1223-R0420055	SOFT SHEET, SET	
909	6142-08101	CONT BLOCK, REMOTE CONTROL	
910	4191-0355	BATTERY, DRY	
911	4161-08201102	CORD W/PLUG, REMOTE IN/OUT (×3)	

ABBREVIATIONS IN PARTS LIST

CAPACITORS

CAP, MINI ELE	: Electrolytic
CAP, CER	: Ceramic
CAP, PPP	: Polypropylene
CAP, MYL	: Mylar
CAP, MCA	: Mica
CAP, MINI BP	: Bipolar
CAP, ELE BP	: Electrolytic Bipolar
470U	: 470μF
6800P	: 6800pF
.047U	: 0.047μF

RESISTORS

RES, CBN 1/6P	: Carbon 1/6W
RES, FUSE	: Fuse
RES, CEM 5P	: Cement 5W
RES, MTL 1P	: Metal 1W
2.2k	: 2.2kΩ
220	: 220Ω

TRANSISTORS

XISTOR	: Transistor
FET	: Field Effect Transistor

CONTROLS

RES, V CBN	: Variable Carbon Resistor
RES, SEMI FIX	: Semi-fixed Resistor

NOTE

SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

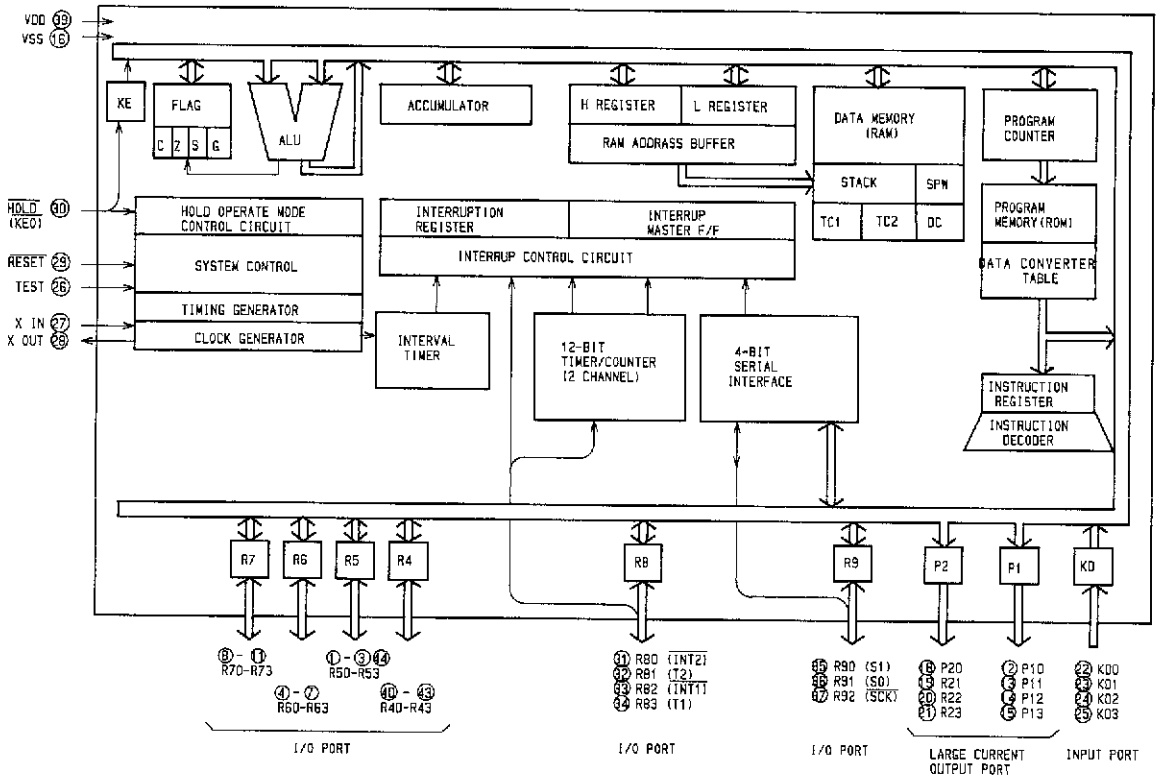
IC TERMINAL FUNCTION

IC701: TMP47C200BF

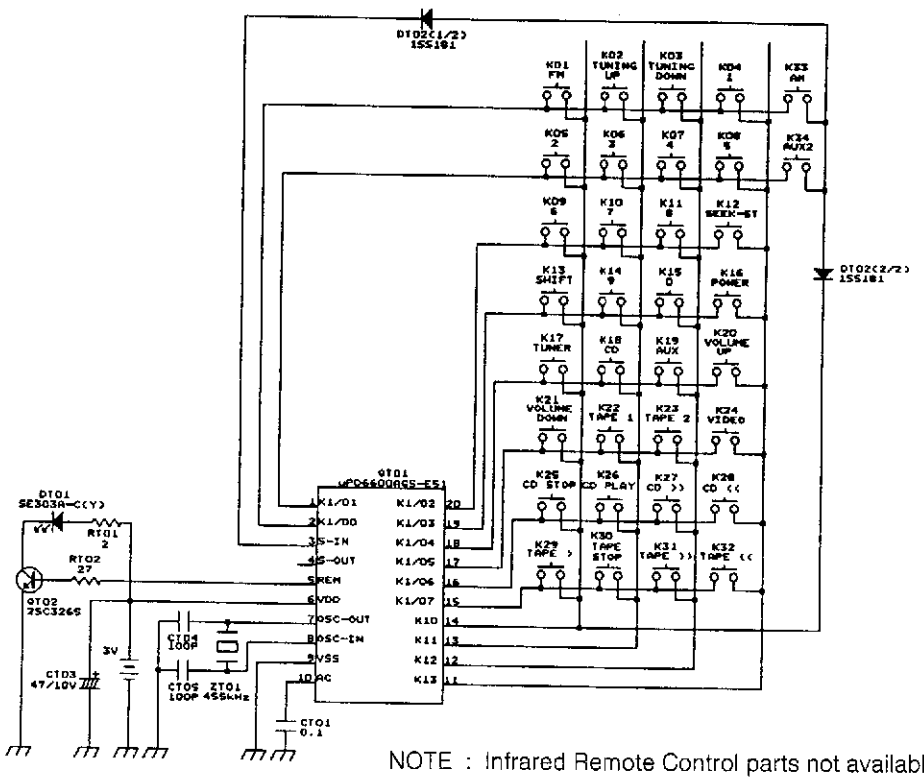
Pin No.	Pin Name	I/O	Function
1	R51	I/O	4-bit w/latch input/output port
2	R52	I/O	4-bit w/latch input/output port
3	R53	I/O	4-bit w/latch input/output port
4	R60	I/O	4-bit w/latch input/output port
5	R61	I/O	4-bit w/latch input/output port
6	R62	I/O	4-bit w/latch input/output port
7	R63	I/O	4-bit w/latch input/output port
8	R70	I/O	4-bit w/latch input/output port
9	R71	I/O	4-bit w/latch input/output port
10	R72	I/O	4-bit w/latch input/output port
11	R73	I/O	4-bit w/latch input/output port
12	P10	O	4-bit w/latch output port
13	P11	O	4-bit w/latch output port
14	P12	O	4-bit w/latch output port
15	P13	O	4-bit w/latch output port
16	VSS	I	0V (GND)
17	N.C.	-	Non connect
18	P20	O	4-bit w/latch output port
19	P21	O	4-bit w/latch output port
20	P22	O	4-bit w/latch output port
21	P23	O	4-bit w/latch output port
22	K00	I	4-bit input port
23	K01	I	4-bit input port
24	K02	I	4-bit input port
25	K03	I	4-bit input port
26	TEST	I	Test point terminal
27	XIN	I	Crystal osciiator input
28	XOUT	O	Crystal oscilator output
29	$\overline{\text{RESET}}$	I	Reset signal input
30	HOLD(KEO)	I	Sens input
31	R80($\overline{\text{INT2}}$)	I/O	External interruption 2 input
32	R81(T2)	I/O	Timer/counter 2 input
33	R82($\overline{\text{INT1}}$)	I/O	External interruption 1 input
34	R83(T1)	I/O	4-bit w/latch input/output, timer/counter input
35	R90(SI)	I	Serial data input
36	R91(SO)	O	Serial data output
37	R92($\overline{\text{SCK}}$)	I/O	Serial clock input/output
38	N.C.	-	Non connect
39	VDD	I	+5V Power supply
40	R40	I/O	4-bit input/output port
41	R41	I/O	4-bit input/output port
42	R42	I/O	4-bit input/output port
43	R43	I/O	4-bit input/output port
44	R50	I/O	4-bit input/output port

IC BLOCK DIAGRAM

IC701: TMP47C200BF

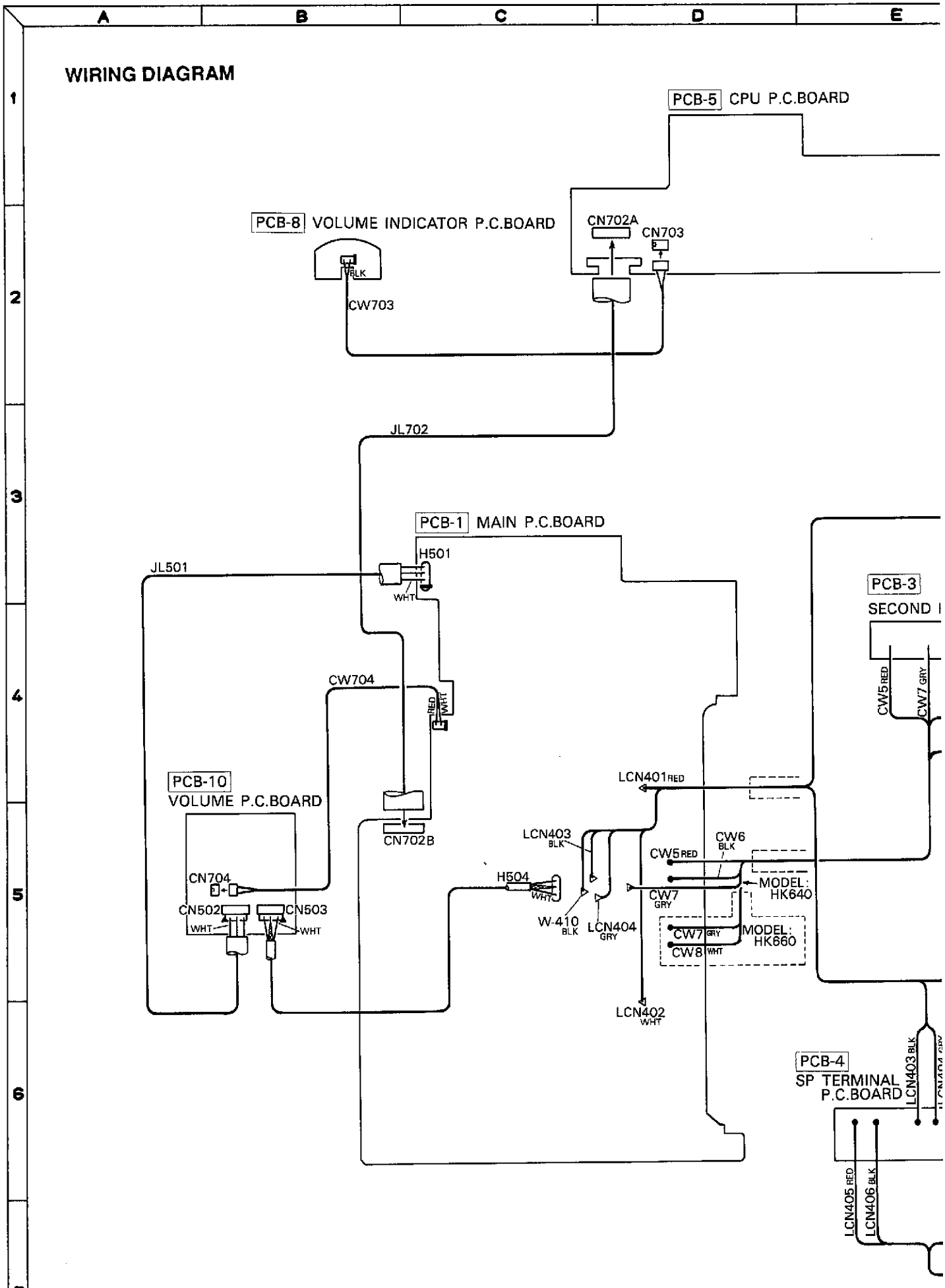


INFRARED REMOTE CONTROL SCHEMATIC DIAGRAM

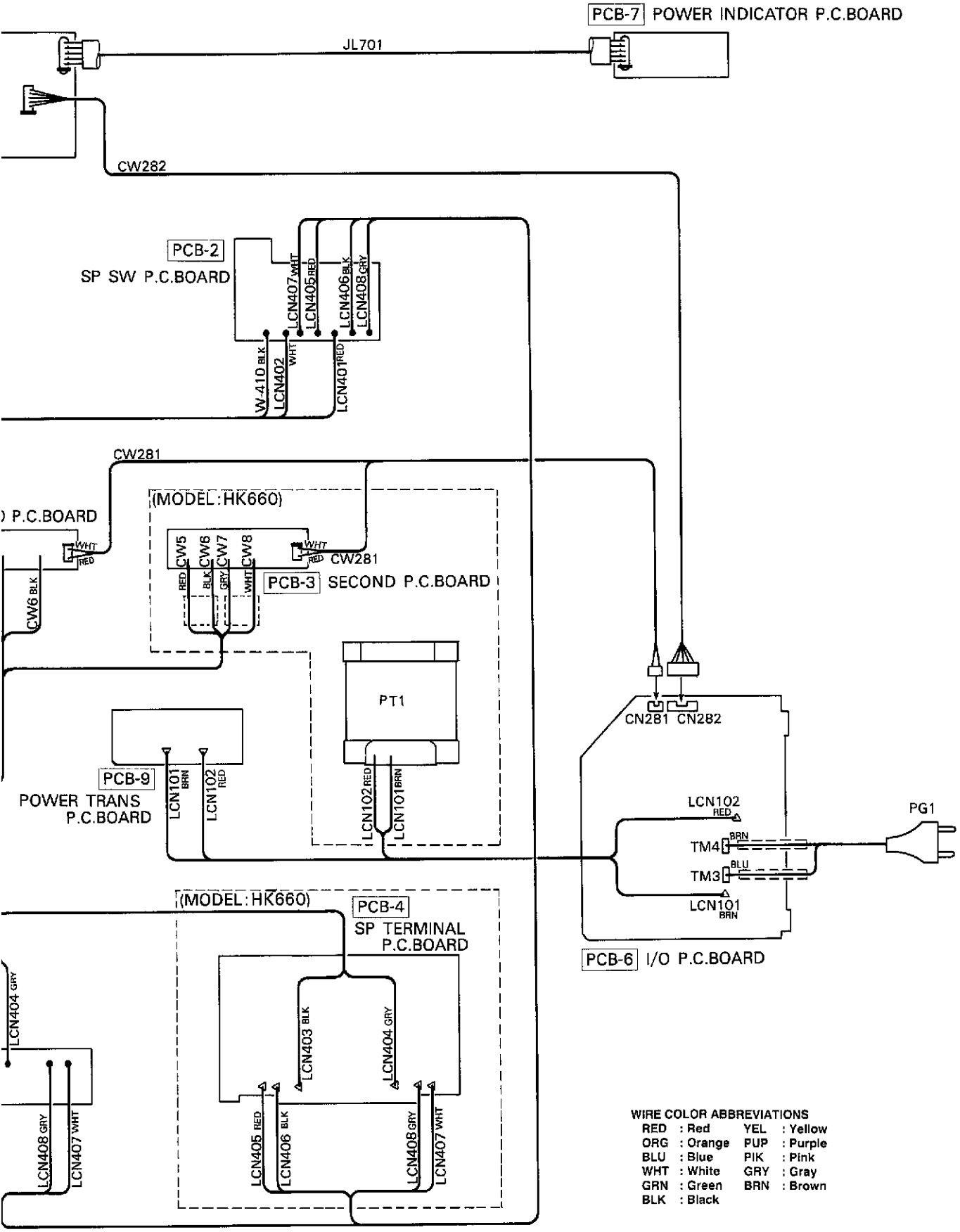


NOTE : Infrared Remote Control parts not available.
Schematic diagram is supplied for reference only.

WIRING DIAGRAM



F G H I J



WIRE COLOR ABBREVIATIONS

RED	: Red	YEL	: Yellow
ORG	: Orange	PUP	: Purple
BLU	: Blue	PIK	: Pink
WHT	: White	GRY	: Gray
GRN	: Green	BRN	: Brown
BLK	: Black		

PH600 Phono PCB Option:

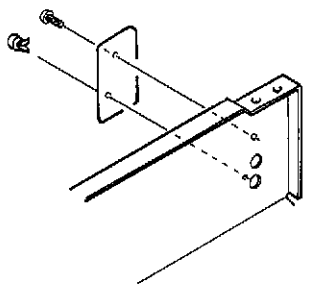
When this option is installed, MM or MC turntables can be connected to the RCA jacks on the Phono PCB. To use the Phono input, the function selector switch on the front panel must be set to the AUX position. Please note that which the Phono PCB option installed, signal wires shall not be connected to the AUX RCA connectors. Signal applied to the AUX input with the Phono option installed, will be attenuated and may be distorted. Installation of Optional Phono PCB (PH600):

(Please re-print the information from information sheet you already prepared.)

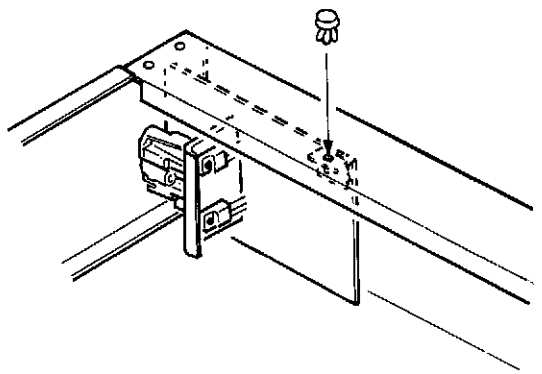
HOW TO INSTALL

① Remove 6 screws and then remove the Top Cover.

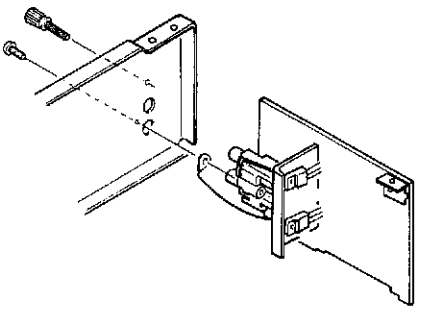
② Remove a screw and a rivet and then remove the plate.



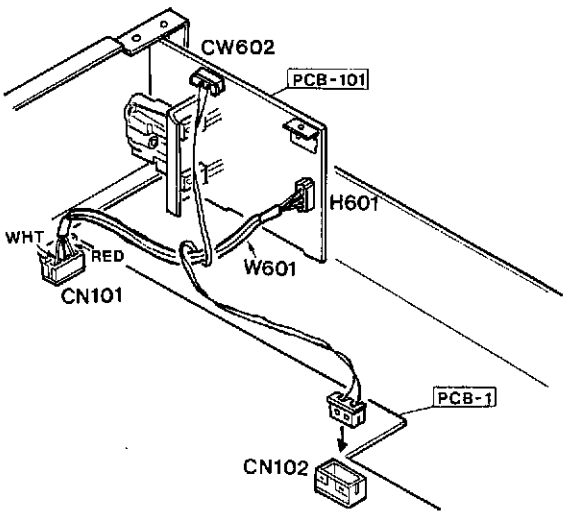
③ Secure PH600 with a rivet removed from the plate.



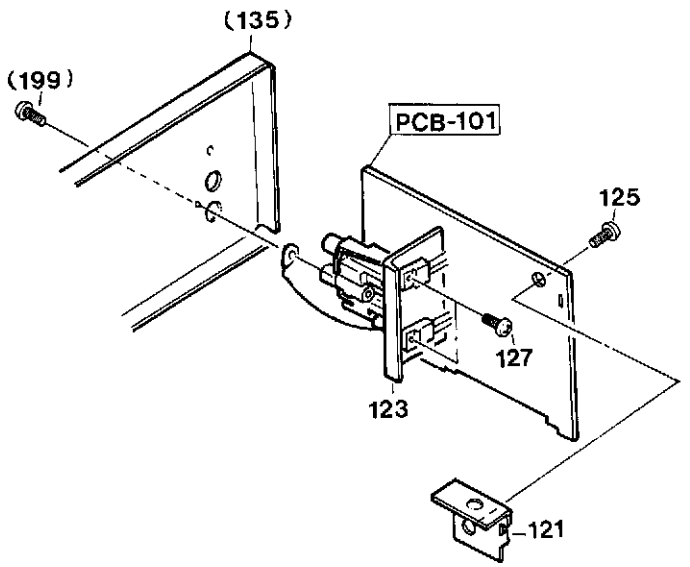
④ Secure the screw removed from the plate and the ground terminal screw (included).



⑤ Connect the 2 cables precisely as shown in the illustration.



GENERAL UNIT



GENERAL UNIT PARTS LIST

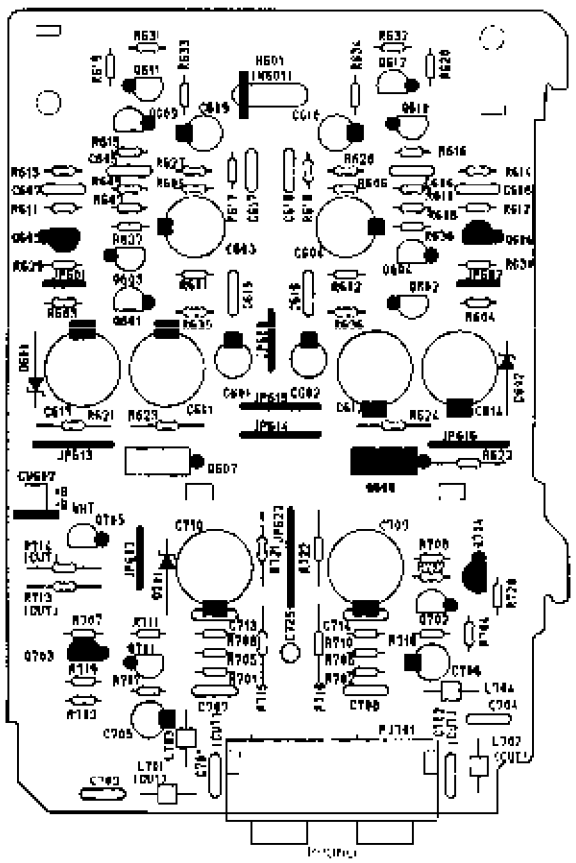
Ser. No.	Ref. No.	Part No.	Description
	121	2219-8350	METAL FITTIG
	123	2222-7179	HEAT SINK
	125	2347-R0130062	SCREW, BND T+ (3×6 mm)
	127	2347-R0130082	SCREW, BND T+ (3×8 mm) (×2)

P.C. BOARD

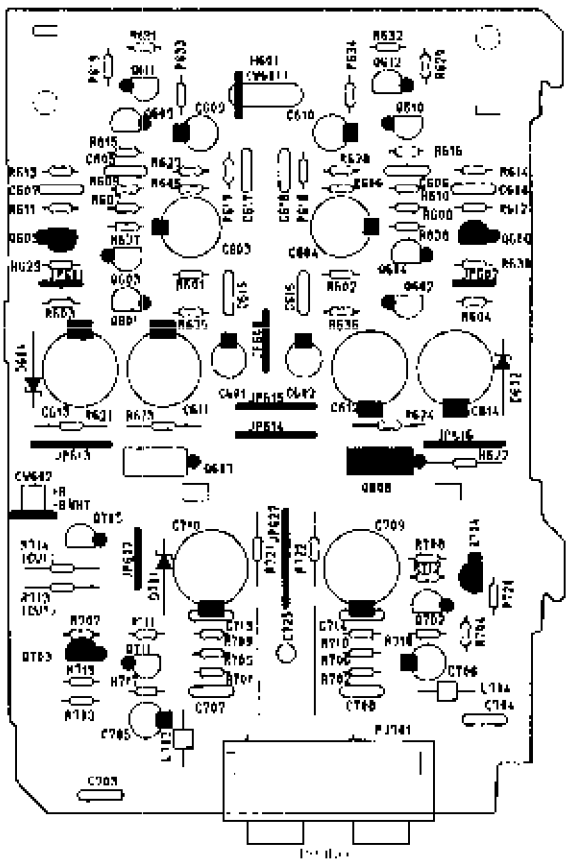
The PH600 is set at the factory as a high gain MC EQ amplifier. It can easily be converted to a MM EQ amplifier by making these changes:

1. Remove L701 and L702 (bare wires with ferrite beads),
2. Remove C701 and C702 (0.022μF capacitors, marked 223J),
3. Remove R715 and R716 (1kΩ resistors), and
4. Add 2 jumper wires (JP) along the dotted lines on the circuit board (near the location of R715 and R716).

PCB-101 **MC VERSION** (Factory setting)



PCB-101 **MM VERSION**



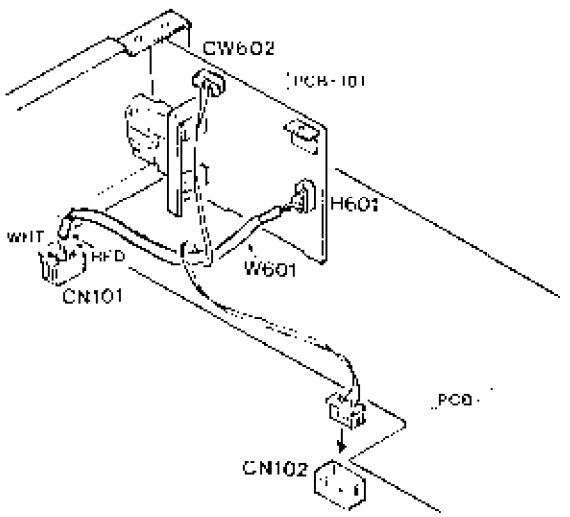
C701, L702 ——— Delete

C701, C702 ——— Delete

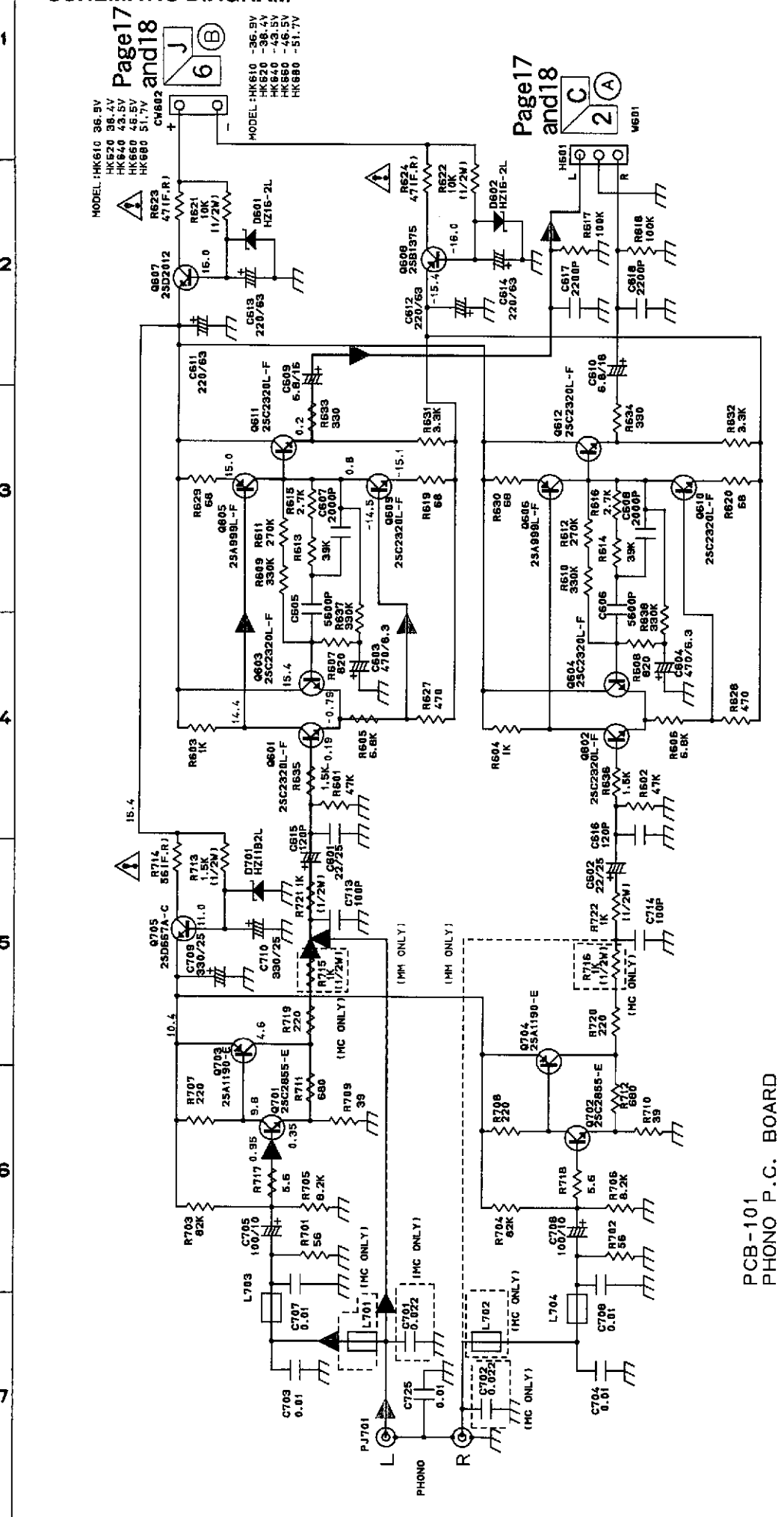
R715, R716 ---- Delete

Add 2 jumper wires (JP) along dotted lines

WIRING DIAGRAM



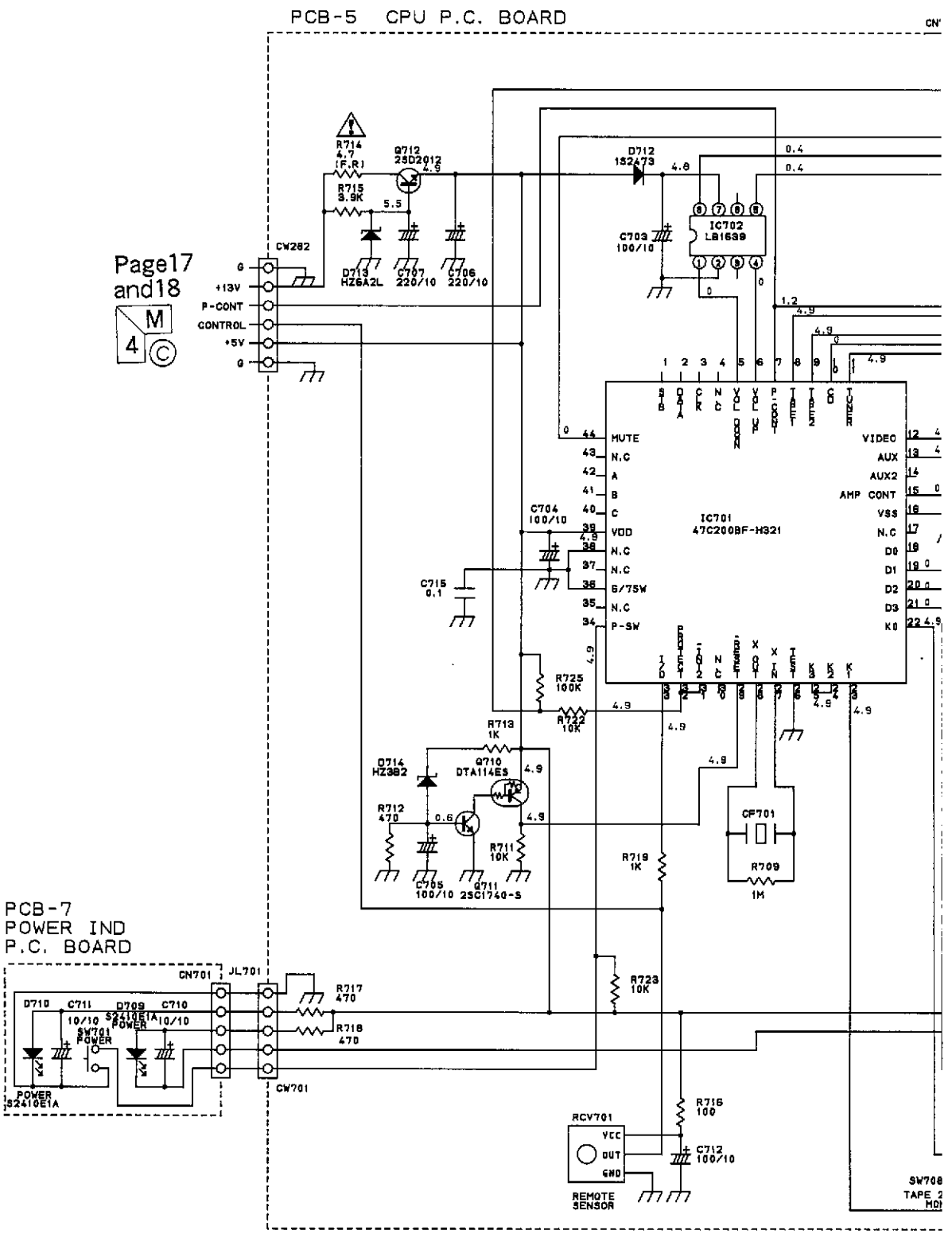
SCHEMATIC DIAGRAM



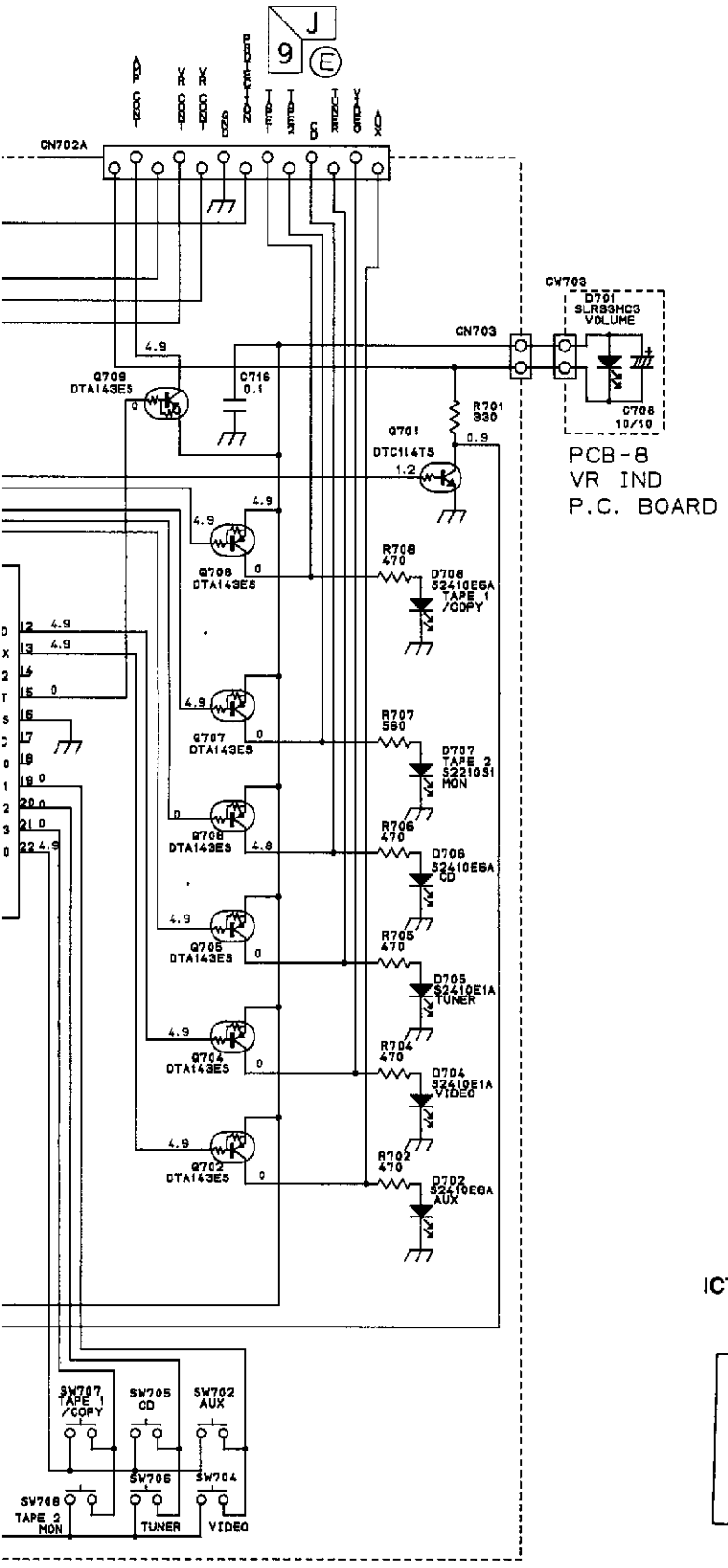
ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description
		PCB-101 PHONO P.C. BOARD	
		CAPACITORS	
400	C601	5345-S29DM226	CAP, MINI ELE 22U/25V
400	C602	5345-S29DM226	CAP, MINI ELE 22U/25V
401	C603	5345-S29AD477	CAP, MINI ELE 470U/6.3V
401	C604	5345-S29AD477	CAP, MINI ELE 470U/6.3V
402	C605	5359-5625851	CAP, PPP 5600P
402	C606	5359-5625851	CAP, PPP 5600P
403	C607	5359-2025851	CAP, PPP 2000P
403	C608	5359-2025851	CAP, PPP 2000P
404	C609	5345-685C0951	CAP, MINI ELE 6.8U/16V
404	C610	5345-685C0951	CAP, MINI ELE 6.8U/16V
405	C611	5345-S25GM227	CAP, MINI ELE 220U/63V
405	C612	5345-S25GM227	CAP, MINI ELE 220U/63V
405	C613	5345-S25GM227	CAP, MINI ELE 220U/63V
405	C614	5345-S25GM227	CAP, MINI ELE 220U/63V
406	C615	5359-1215851	CAP, PPP 120P
406	C616	5359-1215851	CAP, PPP 120P
430	C617	5359-2225851	CAP, PPP 2200P
430	C618	5359-2225851	CAP, PPP 2200P
441	C701	5359-S010J223	CAP, PPP .022U
441	C702	5359-S010J223	CAP, PPP .022U
442	C703	5359-S010J103	CAP, PPP .01U
442	C704	5359-S010J103	CAP, PPP .01U
443	C705	5345-S29BM107	CAP, MINI ELE 100U/10V
443	C706	5345-S29BM107	CAP, MINI ELE 100U/10V
442	C707	5359-S010J103	CAP, PPP .01U
442	C708	5359-S010J103	CAP, PPP .01U
444	C709	5345-S25DM337	CAP, MINI ELE 330U/25V
444	C710	5345-S25DM337	CAP, MINI ELE 330U/25V
438	C713	5359-S010K101	CAP, PPP 100P
438	C714	5359-S010K101	CAP, PPP 100P
439	C725	5359-S010J103	CAP, PPP .01U
		RESISTORS	
413	R601	5130-R010J473	RES, CBN 1/6P 47K
413	R602	5130-R010J473	RES, CBN 1/6P 47K
414	R603	5130-R010J102	RES, CBN 1/6P 1K
414	R604	5130-R010J102	RES, CBN 1/6P 1K
415	R605	5130-R010J682	RES, CBN 1/6P 6.8K
415	R606	5130-R010J682	RES, CBN 1/6P 6.8K
416	R607	5178-821381	RES, MTL 1/6P 820
416	R608	5178-821381	RES, MTL 1/6P 820
417	R609	5178-334381	RES, MTL 1/6P 330K
417	R610	5178-334381	RES, MTL 1/6P 330K
418	R611	5178-274381	RES, MTL 1/6P 270K
418	R612	5178-274381	RES, MTL 1/6P 270K
419	R613	5178-393381	RES, MTL 1/6P 39K
419	R614	5178-393381	RES, MTL 1/6P 39K
420	R615	5178-272381	RES, MTL 1/6P 2.7K
420	R616	5178-272381	RES, MTL 1/6P 2.7K
421	R617	5130-R010J104	RES, CBN 1/6P 100K
421	R618	5130-R010J104	RES, CBN 1/6P 100K
428	R619	5130-R010J680	RES, CBN 1/6P 68
428	R620	5130-R010J680	RES, CBN 1/6P 68
422	R621	5130-R030J103	RES, CBN 1/2P 10K
422	R622	5130-R030J103	RES, CBN 1/2P 10K
423 ⚠	R623	5102-4705116	RES, FUSE 47
423 ⚠	R624	5102-4705116	RES, FUSE 47
429	R627	5130-R010J471	RES, CBN 1/6P 470
429	R628	5130-R010J471	RES, CBN 1/6P 470
428	R629	5130-R010J680	RES, CBN 1/6P 68
428	R630	5130-R010J680	RES, CBN 1/6P 68
427	R631	5130-R010J332	RES, CBN 1/6P 3.3K
427	R632	5130-R010J332	RES, CBN 1/6P 3.3K
424	R633	5130-R010J331	RES, CBN 1/6P 330
424	R634	5130-R010J331	RES, CBN 1/6P 330
433	R635	5130-R010J152	RES, CBN 1/6P 1.5K
433	R636	5130-R010J152	RES, CBN 1/6P 1.5K
417	R637	5178-334381	RES, MTL 1/6P 330K
417	R638	5178-334381	RES, MTL 1/6P 330K
450	R701	5130-R010J560	RES, CBN 1/6P 56
450	R702	5130-R010J560	RES, CBN 1/6P 56
456	R703	5130-R010J823	RES, CBN 1/6P 82K
456	R704	5130-R010J823	RES, CBN 1/6P 82K
451	R705	5130-R010J822	RES, CBN 1/6P 8.2K
451	R706	5130-R010J822	RES, CBN 1/6P 8.2K
458	R707	5130-R010J221	RES, CBN 1/6P 220
458	R708	5130-R010J221	RES, CBN 1/6P 220
452	R709	5178-390381	RES, MTL 1/6P 39
452	R710	5178-390381	RES, MTL 1/6P 39
453	R711	5178-681381	RES, MTL 1/6P 680
453	R712	5178-681381	RES, MTL 1/6P 680
454	R713	5130-R030J152	RES, CBN 1/2P 1.5K
457 ⚠	R714	5102-5604713	RES, FUSE 56
459	R715	5130-R030J102	RES, CBN 1/2P 1K
459	R716	5130-R030J102	RES, CBN 1/2P 1K
440	R717	5130-R010J5R6	RES, CBN 1/6P 5.6
440	R718	5130-R010J5R6	RES, CBN 1/6P 5.6
458	R719	5130-R010J221	RES, CBN 1/6P 220
458	R720	5130-R010J221	RES, CBN 1/6P 220
459	R721	5130-R030J102	RES, CBN 1/2P 1K
459	R722	5130-R030J102	RES, CBN 1/2P 1K
		TRANSISTORS	
409	Q601	5613-2320L(F)	XISTOR, NPN R
409	Q602	5613-2320L(F)	XISTOR, NPN R
409	Q603	5613-2320L(F)	XISTOR, NPN R
409	Q604	5613-2320L(F)	XISTOR, NPN R
410	Q605	5611-999L(F)	XISTOR, PNP R
410	Q606	5611-999L(F)	XISTOR, PNP R
411	Q607	5614-2012	XISTOR, NPN A
412	Q608	5612-1375	XISTOR, PNP A
426	Q609	5613-2320L(F)	XISTOR, NPN R
426	Q610	5613-2320L(F)	XISTOR, NPN R
426	Q611	5613-2320L(F)	XISTOR, NPN R
426	Q612	5613-2320L(F)	XISTOR, NPN R
447	Q701	5613-2855(E)	XISTOR, NPN R
447	Q702	5613-2855(E)	XISTOR, NPN R
448	Q703	5611-1190(E)	XISTOR, PNP R
448	Q704	5611-1190(E)	XISTOR, PNP R
449	Q705	5614-667A(C)	XISTOR, NPN A
		DIODES	
408	D601	5635-HZ16-2L	DIODE, ZENER
408	D602	5635-HZ16-2L	DIODE, ZENER
445	D701	5635-HZ11B2L	DIODE, ZENER
		MISCELLANEOUS	
407	CW602	4163-S0202201	CONNECTOR W/W, 2 PIN
446	PJ701	4489-04006002	PIN JACK, MLT, PHONO
455	L701	5597-3	CORE, BEADS
455	L702	5597-3	CORE, BEADS
455	L703	5597-3	CORE, BEADS
455	L704	5597-3	CORE, BEADS
431	W601	4142-00151241	SHLD WIRE, 2C
437		4211-4	LUG, C725
432		2240-Z031	HOLDER, H601(W601)
		CHASSIS MISCELLANEOUS	
		MISCELLANEOUS	
460		4214-168	TERMINAL, GND
		PACKING UNIT PARTS LIST	
		MISCELLANEOUS	
107		1111-1780J152	OWNER GUIDE
109		1231-00401	GIFT BOX
113		1241-00501	POLYETHY BAG, SET
115		1756-00307	LABEL, OPTIONAL PHONO BOARD

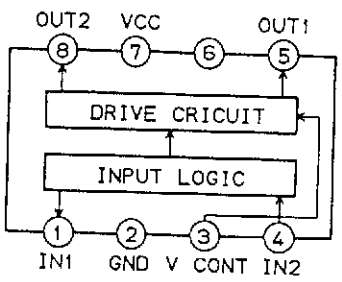
SCHEMATIC DIAGRAM (1)



Page17and18

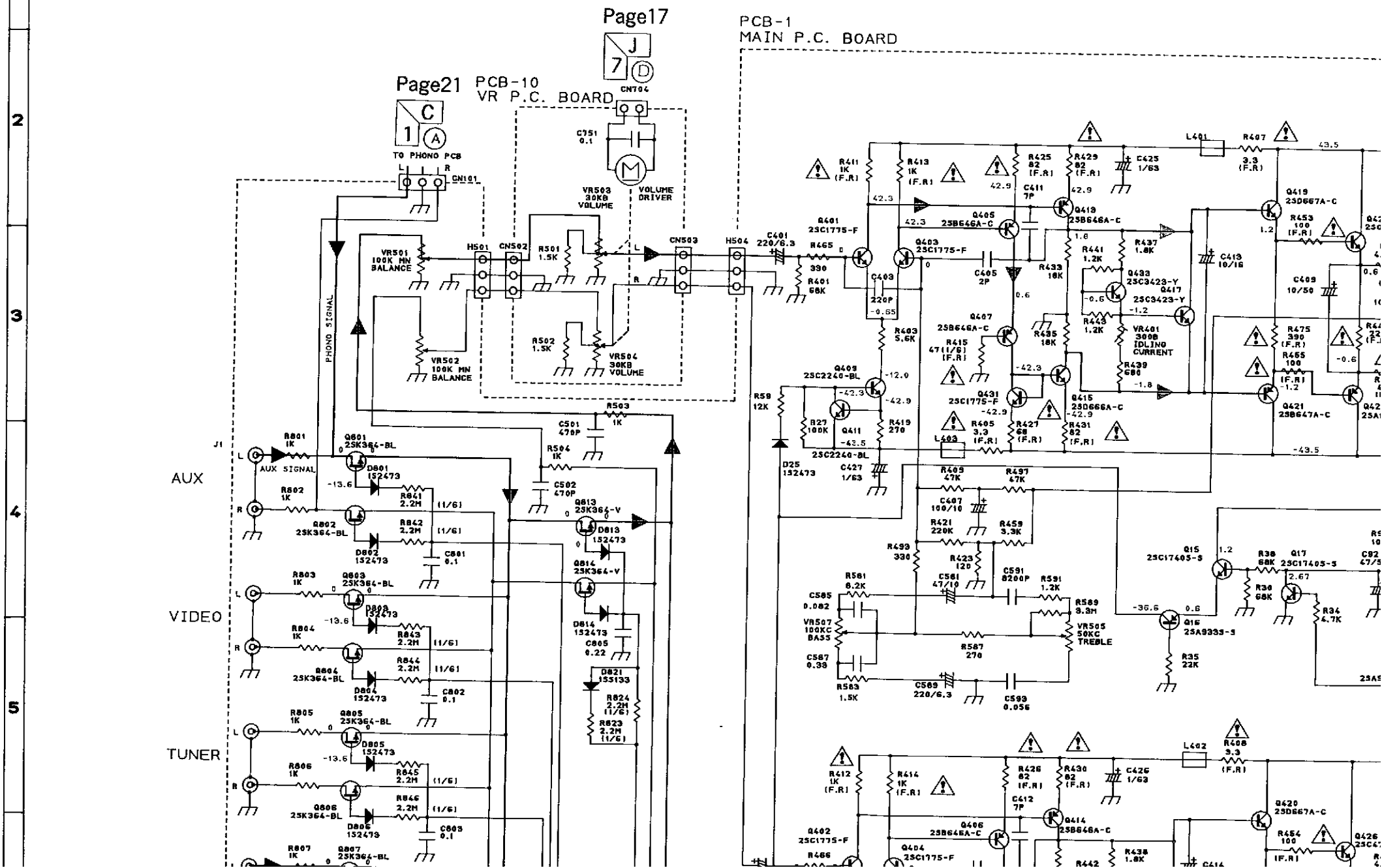


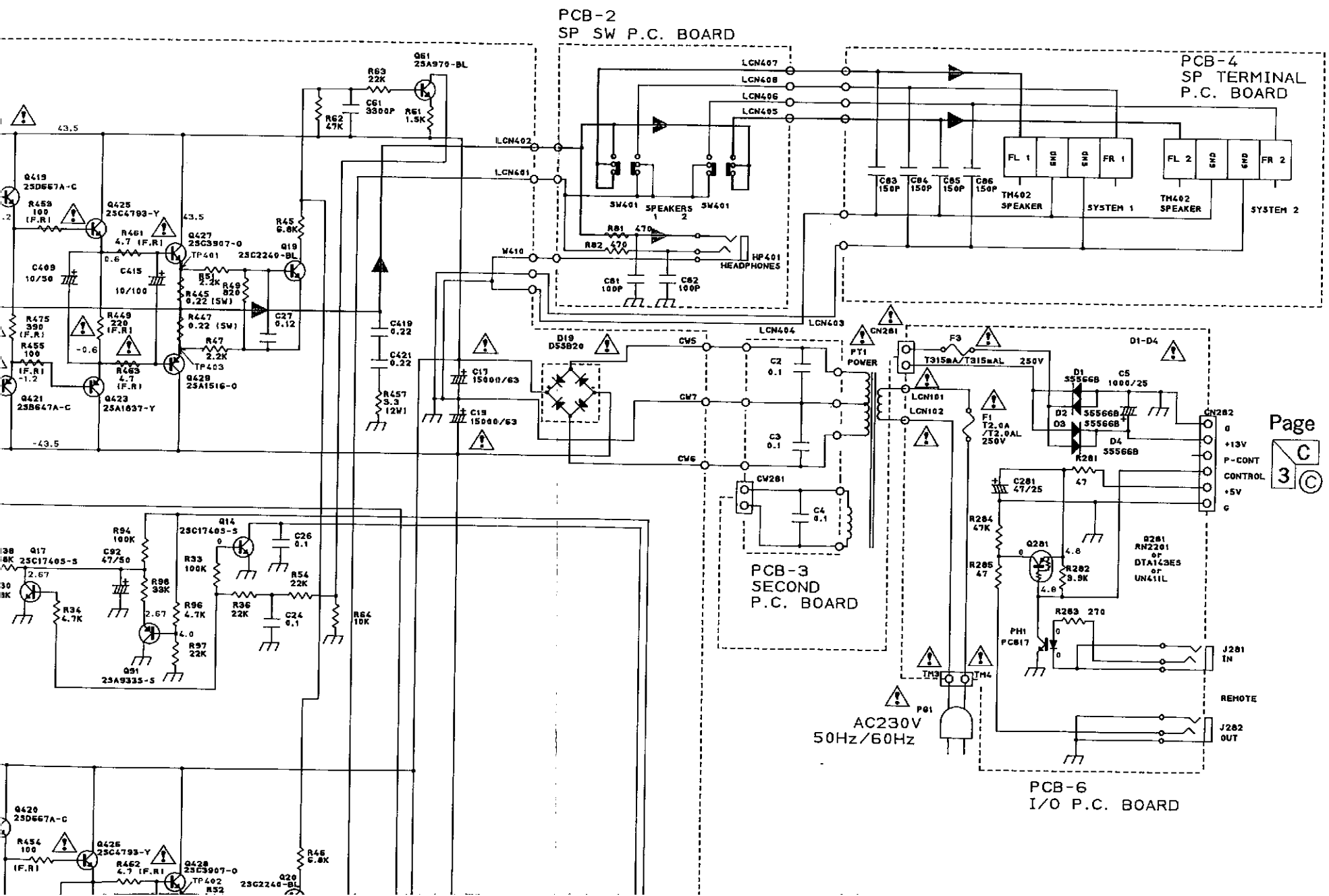
IC702: LB1639 Volume Motor Driver



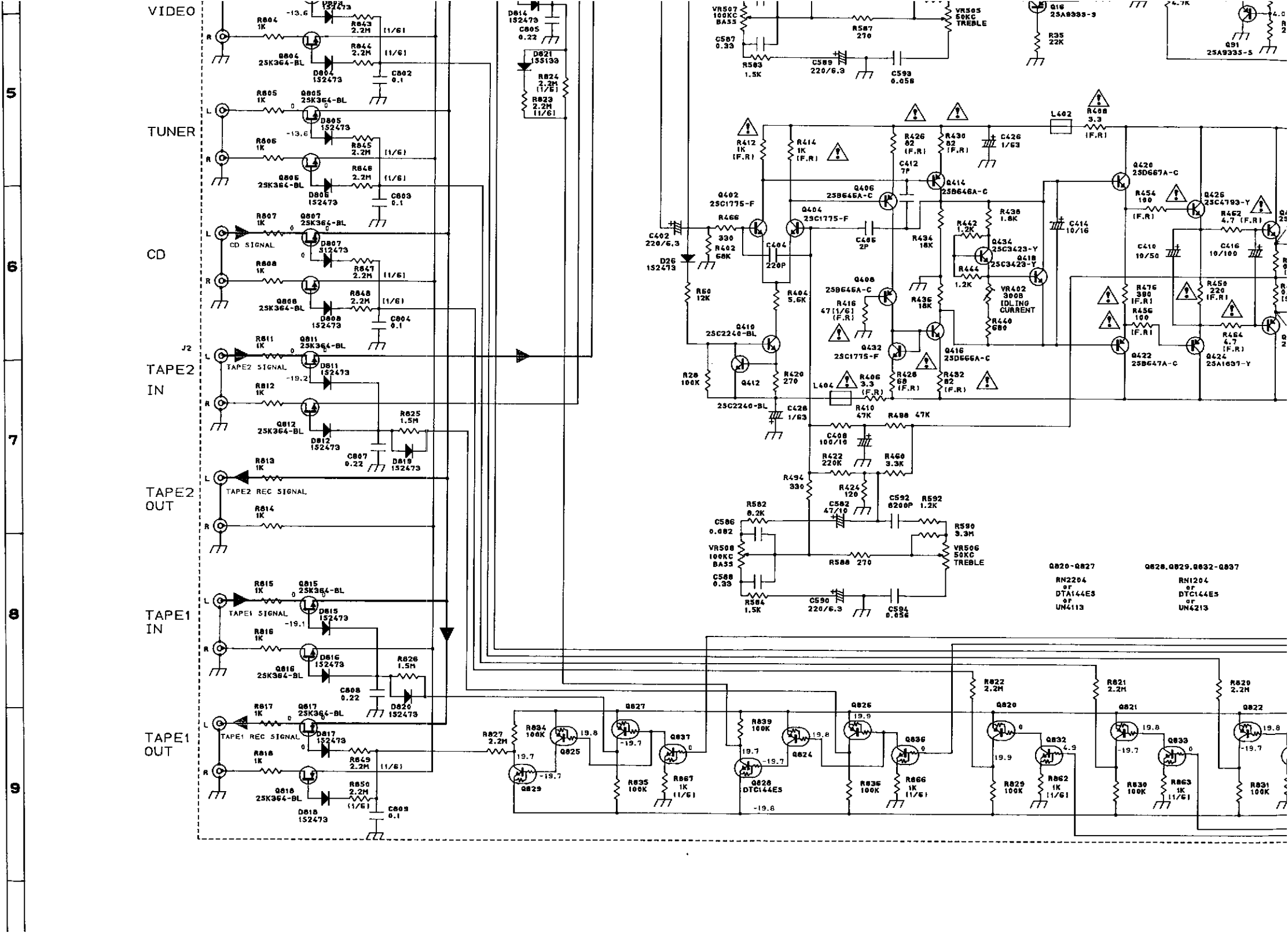
SCHEMATIC DIAGRAM (2)

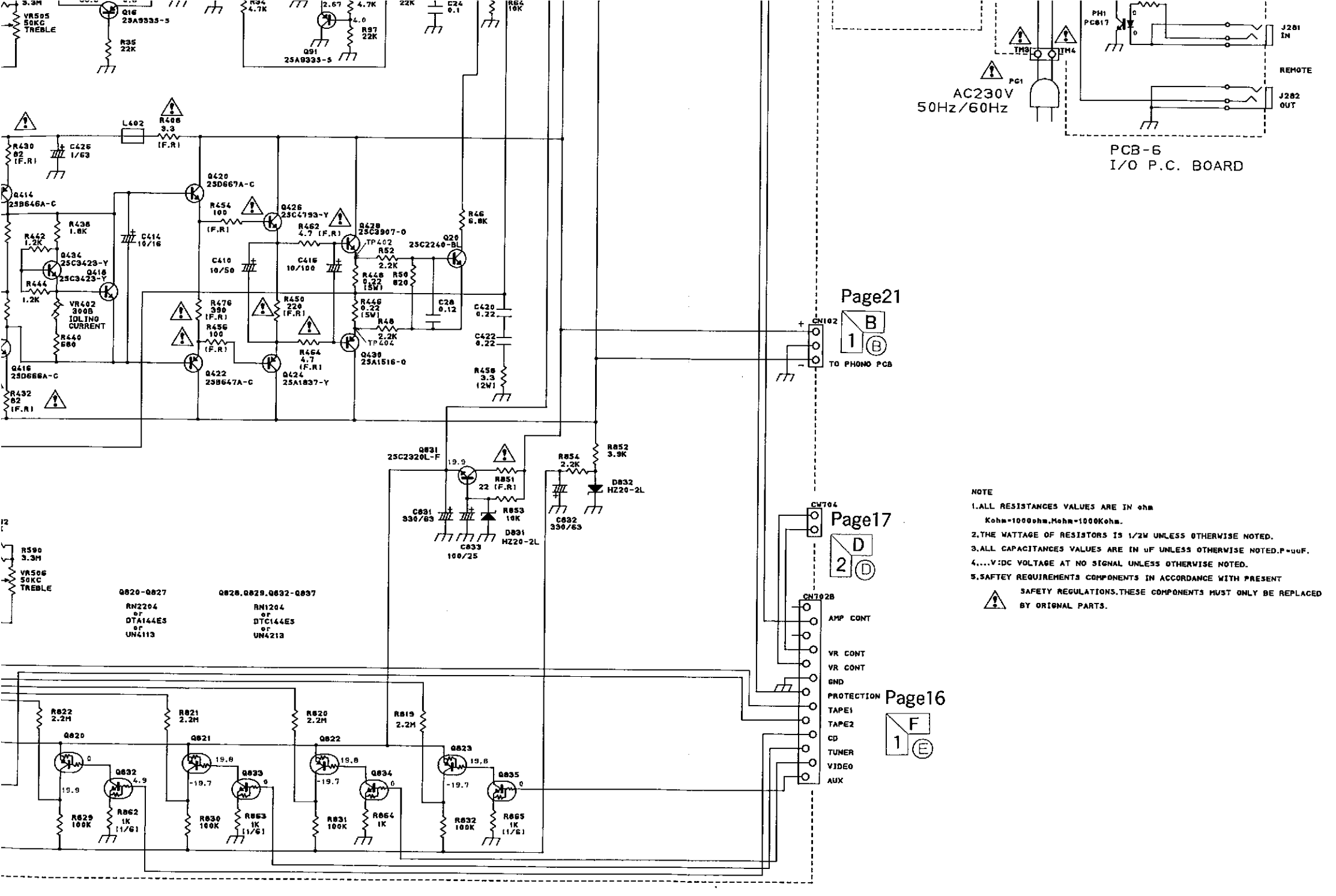
MODEL:HK640




PCB-2
SP SW P.C. BOARD
PCB-4
SP TERMINAL
P.C. BOARD
PCB-3
SECOND
P.C. BOARD
PCB-6
I/O P.C. BOARD
AC230V
50Hz/60Hz
SPEAKERS
HEADPHONES
SYSTEM 1
SYSTEM 2
REMOTE
Q61 2SA970-BL
Q419 2SD667A-C
Q425 2SC4793-Y
Q427 2SC3907-O
Q19 2SC2240-BL
Q421 2SB647A-C
Q423 2SA1837-Y
Q428 2SA1516-O
Q420 2SD667A-C
Q426 2SC4793-Y
Q428 2SC3907-O
Q20 2SC2240-BL
Q14 2SC17405-5
Q17 2SC17405-5
Q51 2SA9335-5
D19 DS5B20
D1-D4 S5566B
Q281 RN2201 or DTA143ES or UN411L
PH1 PC817
PT1 POWER
F1 T2.0A /T2.0AL 250V
F3 T315mA/T315mAL 250V
PG1
TM3
TM4
CN281
CN282
LCN401
LCN402
LCN403
LCN404
LCN405
LCN406
LCN407
LCN408
W410
J281 IN
J282 OUT
+13V
P-CONT
CONTROL
+5V
TM402 SPEAKER

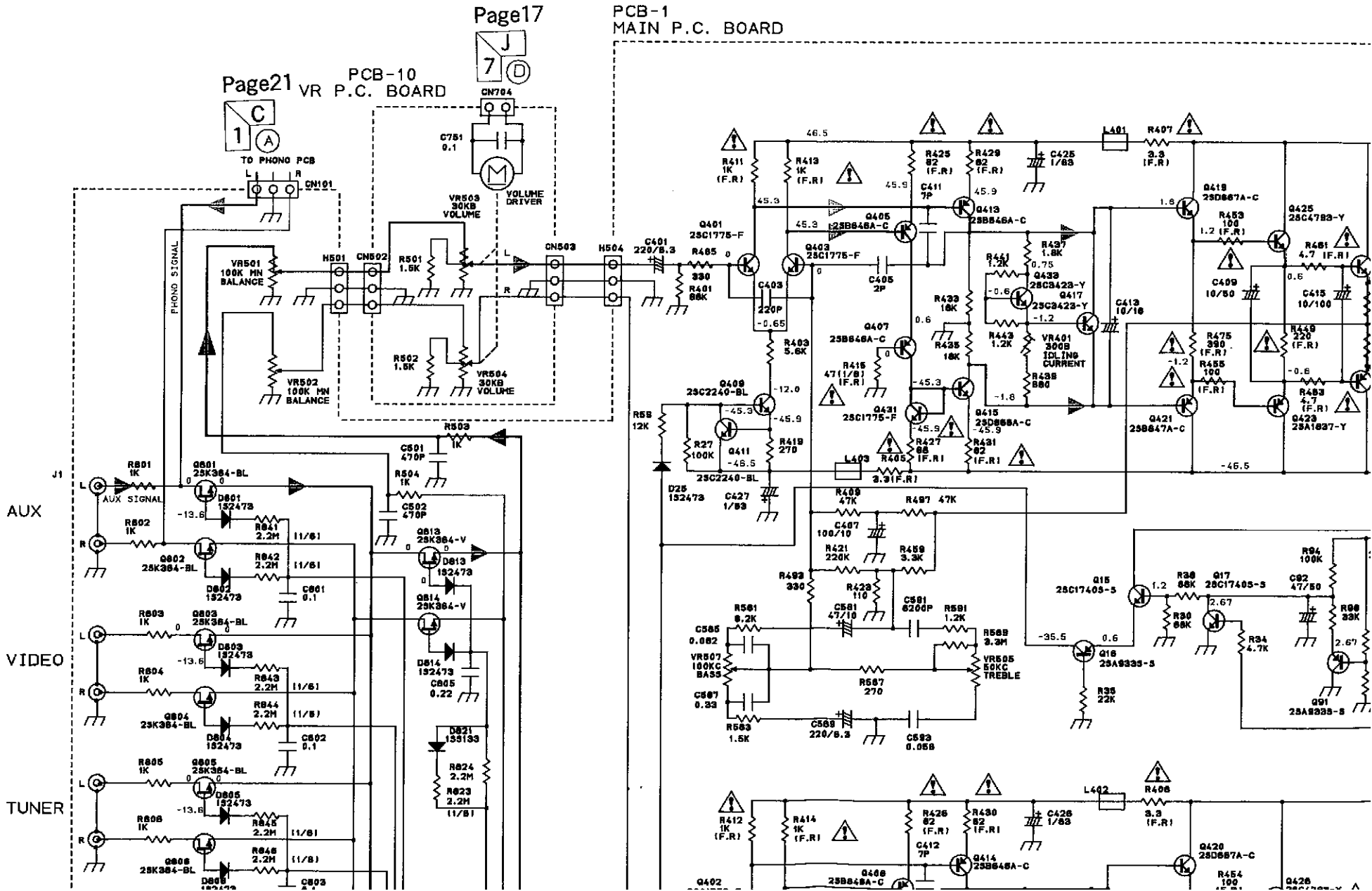
Page 16
C 3 C

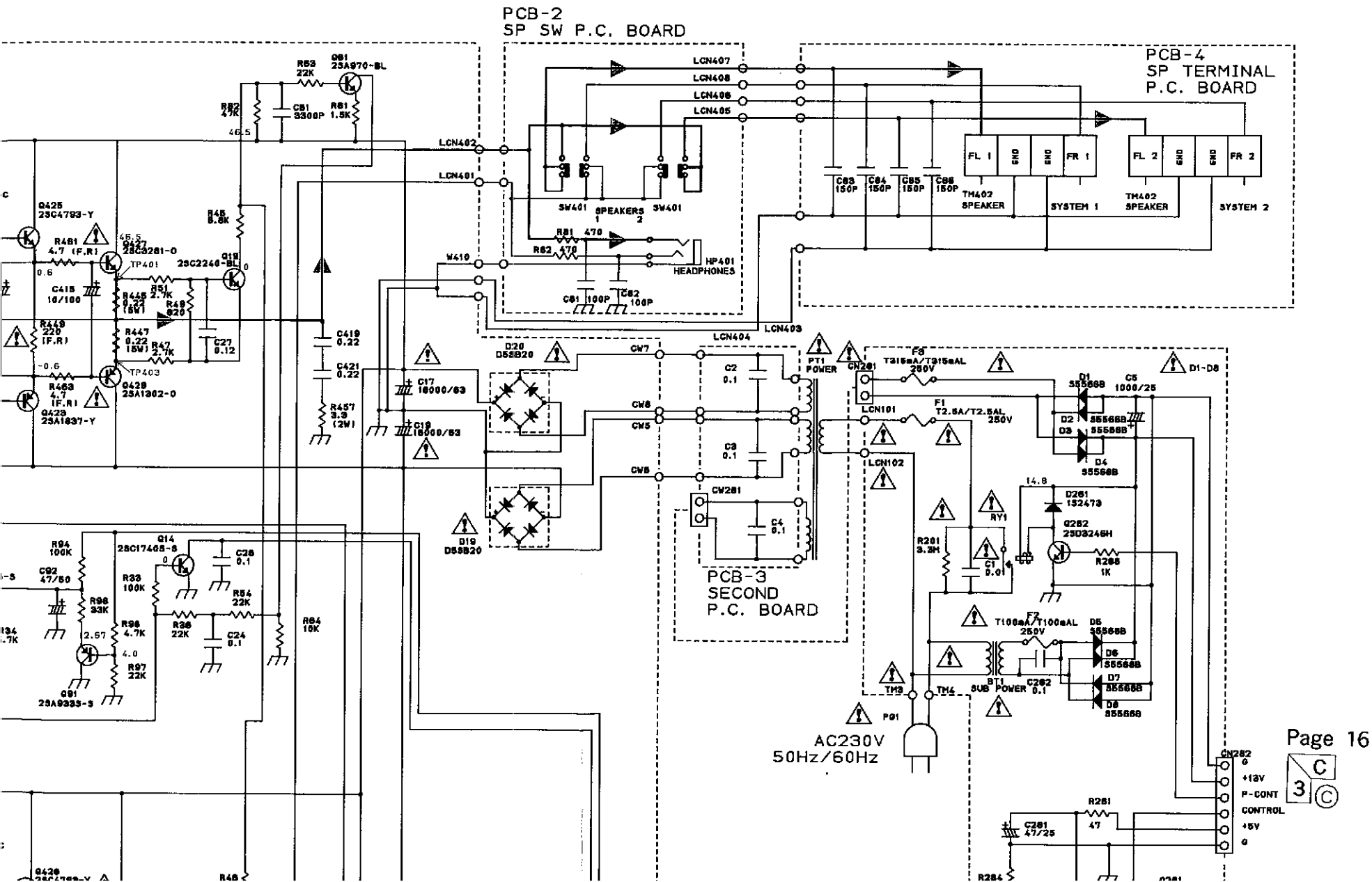

VIDEO
TUNER
CD
TAPE2 IN
TAPE2 OUT
TAPE1 IN
TAPE1 OUT
CD SIGNAL
TAPE2 SIGNAL
TAPE2 REC SIGNAL
TAPE1 SIGNAL
TAPE1 REC SIGNAL
J2
Q804 2SK364-BL
Q805 2SK364-BL
Q806 2SK364-BL
Q807 2SK364-BL
Q808 2SK364-BL
Q811 2SK364-BL
Q812 2SK364-BL
Q815 2SK364-BL
Q816 2SK364-BL
Q817 2SK364-BL
Q818 2SK364-BL
D804 1S2473
D805 1S2473
D806 1S2473
D807 1S2473
D808 1S2473
D811 1S2473
D812 1S2473
D815 1S2473
D816 1S2473
D817 1S2473
D818 1S2473
D814 1S2473
D821 1SS133
D819 1S2473
D820 1S2473
Q402 2SC1775-F
Q404 2SC1775-F
Q406 2SB646A-C
Q408 2SB646A-C
Q410 2SC2240-BL
Q412 2SC2240-BL
Q414 2SB646A-C
Q416 2SD666A-C
Q418 2SC3423-Y
Q420 2SD667A-C
Q422 2SB647A-C
Q424 2SA1697-Y
Q426 2SC4793-Y
Q432 2SC1775-F
Q434 2SC3423-Y
Q825 DTC144ES
Q826 DTC144ES
Q827 DTC144ES
Q828 DTC144ES
Q829 DTC144ES
Q830 DTC144ES
Q831 DTC144ES
Q832 DTC144ES
Q833 DTC144ES
Q834 DTC144ES
Q835 DTC144ES
Q836 DTC144ES
Q837 DTC144ES
Q91 2SA933S-S
Q16 2SA933S-S
VR507 100KC BASS
VR505 50KC TREBLE
VR508 100KC BASS
VR506 50KC TREBLE
VR402 300B IDLING CURRENT
Q820-Q827
RN2204 or DTA144ES or UN4113
Q828,Q829,Q832-Q837
RN1204 or DTC144ES or UN4213

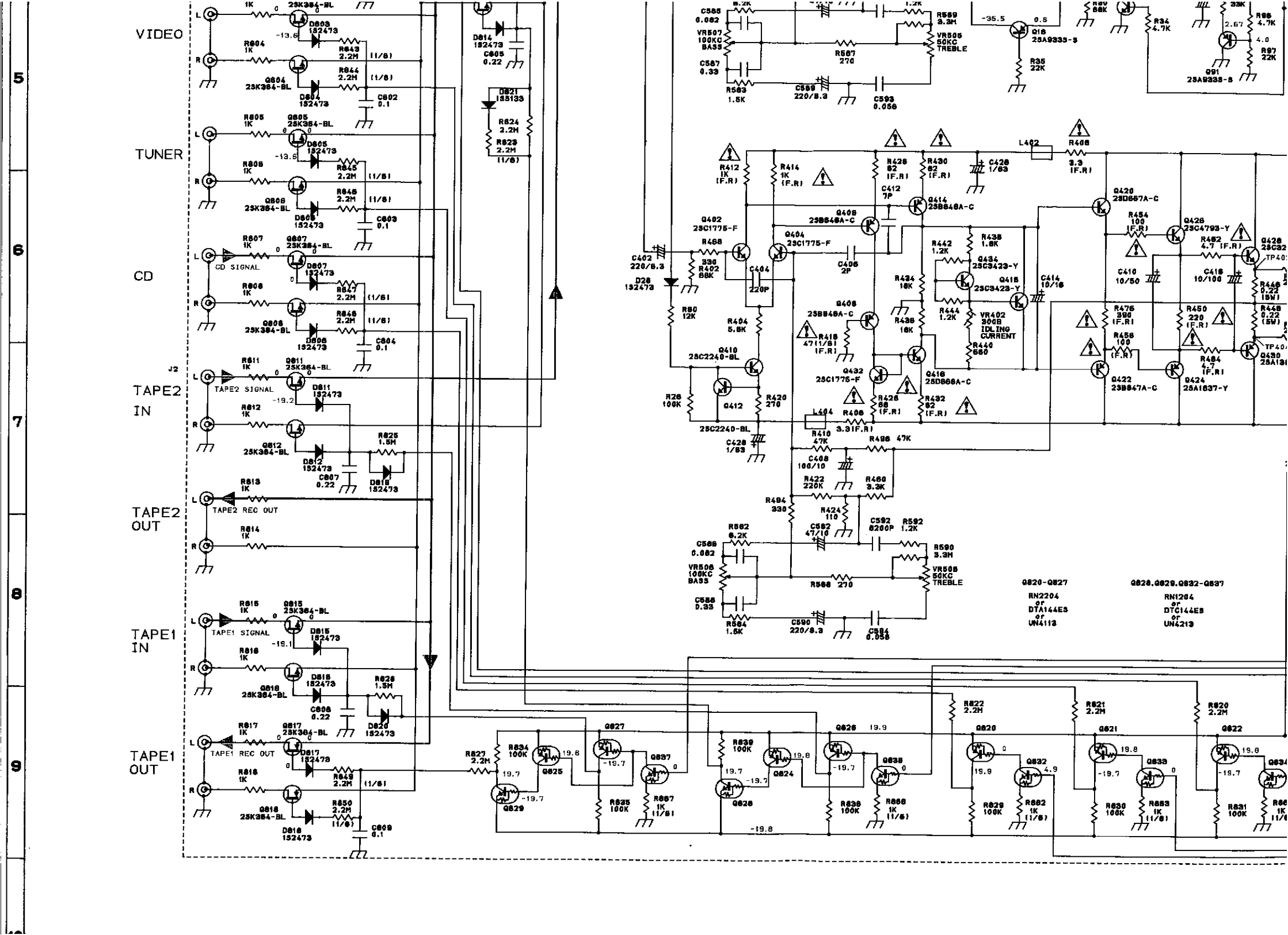

PCB-6
I/O P.C. BOARD
AC230V
50Hz/60Hz
REMOTE
J281
IN
J282
OUT
PH1
PC817
PC1
TM3
TM4
Page21
CN102
TO PHONO PCB
Page17
CW704
CN702B
AMP CONT
VR CONT
VR CONT
GND
PROTECTION
TAPE1
TAPE2
CD
TUNER
VIDEO
AUX
Page16
Q820-Q827
RN2204
or
DTA144ES
or
UN4113
Q828,Q829,Q832-Q837
RN1204
or
DTC144ES
or
UN4213
NOTE
1.ALL RESISTANCES VALUES ARE IN ohm
Kohm=1000ohm,Mohm=1000Kohm.
2.THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3.ALL CAPACITANCES VALUES ARE IN uF UNLESS OTHERWISE NOTED.P=uuF.
4....V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5.SAFTEY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT
SAFETY REGULATIONS.THESE COMPONENTS MUST ONLY BE REPLACED
BY ORIGNAL PARTS.

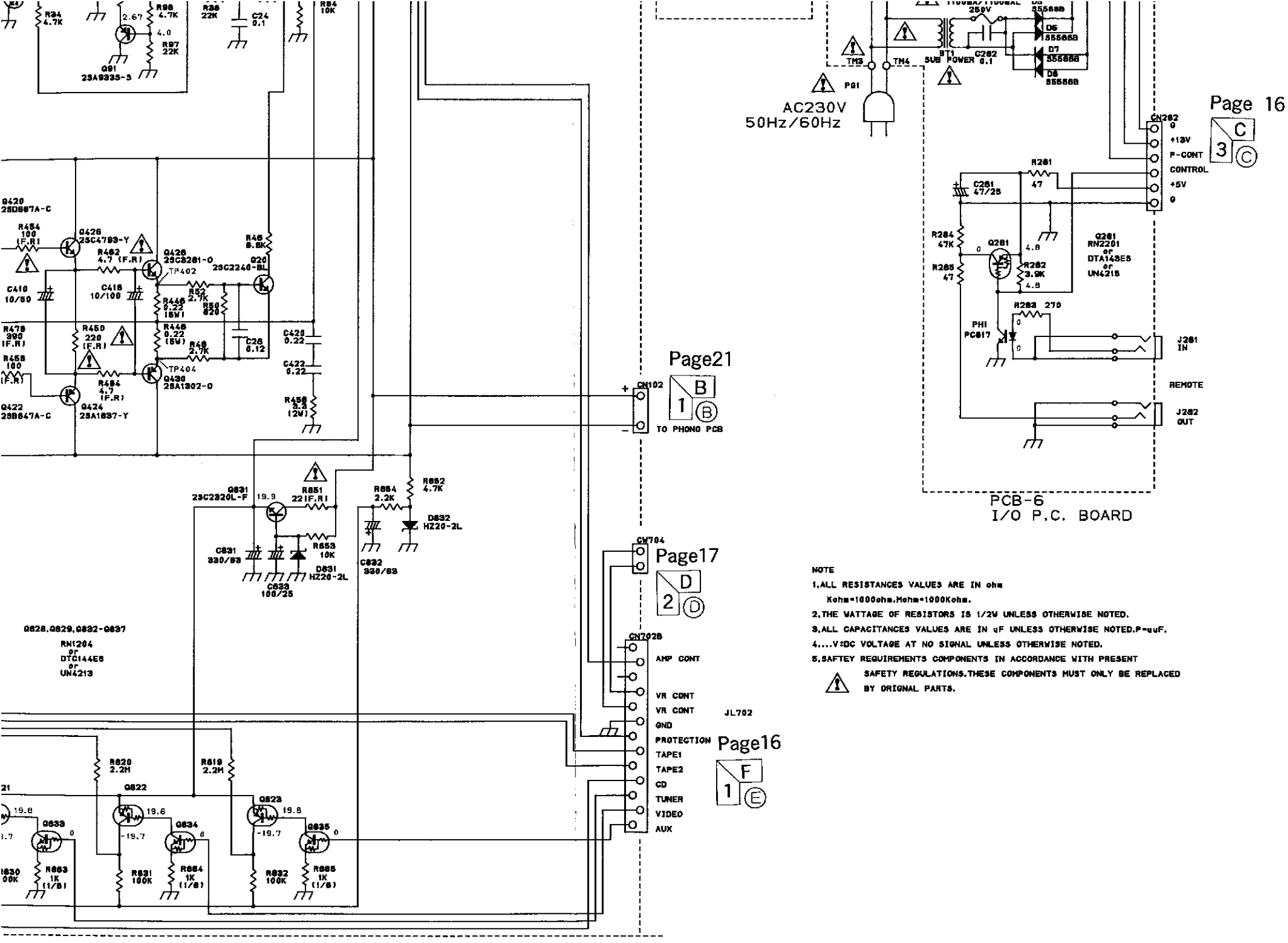
SCHEMATIC DIAGRAM (3)

MODEL:HK660




PCB-2
SP SW P.C. BOARD
PCB-4
SP TERMINAL
P.C. BOARD
PCB-3
SECOND
P.C. BOARD
AC230V
50Hz/60Hz
LCN407
LCN408
LCN406
LCN405
LCN402
LCN401
LCN404
LCN403
SW401
SPEAKERS
HP401
HEADPHONES
FL 1
FR 1
FL 2
FR 2
TM402
SPEAKER
SYSTEM 1
SYSTEM 2
PT1
POWER
CN281
CN101
CN102
CN282
BT1
SUB POWER
PQ1
RY1
TM3
TM4
+13V
P-CONT
CONTROL
+5V


VIDEO
TUNER
CD
TAPE2 IN
TAPE2 OUT
TAPE1 IN
TAPE1 OUT
CD SIGNAL
TAPE2 SIGNAL
TAPE2 REC OUT
TAPE1 SIGNAL
TAPE1 REC OUT
J2
Q820-Q827
RN2204 or DTA144ES or UN4113
Q828,Q829,Q832-Q837
RN1204 or DTC144ES or UN4213



NOTE

1.ALL RESISTANCES VALUES ARE IN ohm
Kohm=1000ohm,Mohm=1000Kohm.

2.THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.

3.ALL CAPACITANCES VALUES ARE IN uF UNLESS OTHERWISE NOTED.P=uuF.

4....V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.

5.SAFTEY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS.THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGNAL PARTS.